ALL ABOUT WILD ANIMALS



BY
FRANK FINN., F.Z.S.

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THE KILL.

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FRANK FINN, B.A. F.Z.S.

WITH EIGHT FULL-PAGE ILLUSTRATIONS IN COLOUR



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WILD ANIMALS
OF YESTERDAY AND TO-DAY

I

INTRODUCTION; BEASTS EXTINCT IN PREHISTORIC TIMES

We are all familiar with

"The idiot who praises, in enthusiastic tone,
Every century but this, and every country but his own,"

and the favourite recreation of a near relative of this gentleman's is to heap praise and sympathy on every member of the class *mammalia* except the human species to which he himself belongs. According to this kind of zoological enthusiast the whole history of man has been a sort of "bad boy's diary"; not content with misbehaving in every possible way himself, he has spread unprovoked devastation among the good animals who were behaving in an exemplary way till he appeared on the scene, and occupying themselves solely with the preservation of what is fondly called the balance of nature. Man, in short, has been made to figure as an obnoxious addition to the programme, the only creature who has con-

sistently behaved as if he did not know that it was possible to have too much of a good thing —in this case his own species.

In reality, there has been nothing very exceptional about human behaviour in the zoological world; having the gift of an infinitely better brain than any other creature, man has used it in exactly the same way as other animals have used their special advantages—for his own benefit, without regard to the interests of his fellow-animals, and, unfortunately, in many cases without much regard to his own ultimate advantage, just as they have done.

We hear much about the destruction of nature's beautiful order by man's pernicious habit of clearing and cultivating the land, and thereby making it uninhabitable for the wild creatures; but the wild creatures carry on their own operations in exactly the same regardless manner, as they get the chance.

The beaver cuts down trees, thereby vastly inconveniencing the squirrels and opossums who want to live in them, and dams up a stream to make a pool, thereby turning land which lots of little creatures want to live upon, into water which drowns them out of house and home; like ourselves, he alters the face of the country to the best of his ability and to suit his own convenience, with a ruthless disregard for the balance of nature.

So does every creature, after its kind, and in

every country, even if man is not there, some other animal will have the upper hand, and will proceed to inconvenience, directly or indirectly, all the other creatures whose abilities are not equal to its own. The huge herds of springboks in South Africa, and the myriads of passenger pigeons in North America, fairly ate out whole districts, not knowing or caring what would happen to the other creatures which looked to the same food as they ate to support them, and their carnivorous foes in turn revelled on them to their hearts' content.

New Zealand has been cited as a happy land where all the birds lived a sort of idyllic life together, with no beasts to interfere with them, to say nothing of man, before the Maoris came and hunted down the moas; but overhead the hawks waited to harry the other birds, and on the ground the weka rails sucked eggs and stole chicks whenever they had the chance, while along the coasts the gulls robbed the oyster-catchers, and the skuas robbed the other sea-fowl, so that the peace was a very broken one, after all.

After living for eight years in India, where, in spite of a civilization many centuries more ancient than our own, the animal life has been less disturbed by man than that of any other country which is at all widely inhabited, I came to the conclusion that if man were not there the country would be run in the interests of the crows, these mischievous birds, by their

intelligence, power of combination, and propensity for minding everyone else's business as well as their own, having an altogether disproportionate voice in the affairs of the animal world; they rob the sparrows' nest and tell tales about the tiger's doings with equal gusto—nothing is safe from them.

Yet all the dominant species of animals give with one hand where they take away with another, so to speak; the beaver's pond is as big a convenience to the musk-rat and the mink as it is a nuisance to the squirrel and the wood-mouse; the beasts and birds of prey which had dined to repletion on springbok and passenger pigeon could afford to let their ordinary prey alone for a time; the weka rail now and then himself made a meal for the hawk, and the crows make things hot for the prowling civet and point out his food to the vulture.

Man himself, the greatest foe of some of the lower animals, is the best friend of others; when he makes a country uninhabitable for some, he converts it into an ideal residence for another set. Some he tames, and these he carries with him in his wanderings about the world; others he distributes without taming them, like the red-deer and the sparrow; and yet a third set quarter themselves on him against his will, like the rat and mouse. Also, his war against the creatures is not always to the death: alone of all, he can and often

does stay his hand in time, and preserve the remnant of a persecuted race, which no other creature has the wit to do.

It is my purpose to make this book a sort of popular zoological stock-taking, as far as the higher land animals are concerned; to pass in review the animals which have been exterminated completely since the dawn of history; to say something about our fight with the other animals, and their more or less inevitable defeat and expulsion. It must be borne in mind that the larger forms of animal life, whether they live upon other animals or on vegetable food, are rivals to humanity too serious to be tolerated when population becomes at all dense. At the same time, many creatures have been wantonly killed off which were harmless and interesting, and even sometimes useful.

Man has made many grievous mistakes in the past, but these need never be repeated; and it is only to him that we can look for a regulation of the zoological world; for

> "In the universe there is nothing great but man;
> In man there is nothing great but mind."

Waste and cruelty do not pay; and in the abolition of waste and cruelty, which are part of nature's methods, we shall find our true vocation as rulers of the animals our kindred.

Before saying anything about the creatures which have become extinct in historical times,

it will be necessary to consider briefly the most striking of those which were once contemporary with man, but disappeared from the earth long before history or tradition began. There are very few of such extinct animals altogether, for by the time that human remains appear on the geological scene, the animals existing had become restricted to types which we know now, and even the species were for the most part as modern as we are, though their range was often different, being much wider than in modern times. Thus, the cave-lion and cave-hyæna were simply the ancestors of the lion and spotted hyæna of the present day, which animals lived in this country and in Europe generally.

But one or two of the beasts of this age, the Pleistocene of geology, have attained a great celebrity by reason of the abundance and comparatively perfect preservation of their remains, which in some cases point to an extinction which is quite recent geologically speaking.

The most celebrated of these is the hairy elephant or Mammoth, which man knew so well that even sketches of it remain; in the cave of La Madeline in the South of France has been found a drawing of the beast executed by some ancient artist on a piece of its own ivory. In other French caverns drawings of the animal appear on the walls, along with some of the wild horse and of the rein-

deer, which then ranged much farther to the south than it does to-day.

These drawings alone would give the lie to the boastful words of grim old Time in Hood's beautiful *Plea of the Midsummer Fairies*—

> "Great Mammoth now hath passed away
> And none but I may know what hide he wore";

but there is far better evidence for the condition of the Mammoth's outside; not only have enormous quantities of the bones and teeth been found, so that for many centuries the fossil tusks have been an article of commerce, and still figure in that capacity, but entire bodies of the beasts, preserved in the frozen soil of Siberia, have come to light during the last century and a half. These show what the drawings indicated, that the Mammoth had a coat of hair. This was of various shades of brown, and varied also in length and quality; there was an undercoat of woolly texture and light colour, as usual in northern animals, a coarse, bristly outside coat, and a mane on the forequarters, which on the chin and breast reached half a yard in length.

The tusks were far longer than in existing elephants, and were strongly curved outwards and upwards, so much so that they could have hardly been of any use for fighting in mature animals; the ears, on the other hand, were smaller than in living elephants. Although, however, the Mammoth's name has become

proverbial for anything of gigantic size, the beast, as a matter of fact, was apparently not much larger than the biggest modern elephants ; and its relationship to the Indian elephant was very close. In this connection it is interesting to notice that the young Indian elephant has a coat of hair, though this is not long and thick, as has been absurdly stated, but so scanty that the skin can be seen through it ; it is, in fact, very like the coat of a well-bred tame pig in quantity.

The first of these mummied Mammoths was found in the Lena delta in 1799, and the skeleton and a little of the hide are still in the St. Petersburg Museum ; and one was discovered as recently as 1901, of which both skin and skeleton were preserved in the same museum, though much of the coat is lost. This beast had evidently died by an accident, as was shown by a broken hip and foreleg, by the extravasated blood in the chest, and even by grass still in the mouth.

The flesh of these " cold-storage " Mammoths was so well preserved that it was eaten, not only by bears, wolves, and dogs, but by the local natives themselves. It has thus come to pass that we know more about the Mammoth in modern times than about any other prehistoric creature, although the wildest stories used to be circulated about it. The wild Mongol tribes and their civilized relatives of China considered it a burrowing creature which

died when its excavations brought it into daylight, and Europeans in classical and mediæval times first referred its remains to those of historical or mythical giants, and afterwards, when it became obvious that the giants were quadrupeds, and elephants at that, racked their brains to account for the presence of such creatures so far away from where they were known to exist. Not until Cuvier's time was it recognized that the Mammoth was a distinct kind of elephant, whose true home had been Europe and the northern parts of Asia, where the forests furnished it with much the same sort of food as is consumed by modern elephants to-day. In America the Mammoth also existed, but is not known to have been contemporary with man, though the Mastodon, an American elephant with molar teeth of a more ordinary and primitive type than the complicated grinders of the Mammoth and modern elephants, appears to have been so.

Along with the Mammoth there inhabited the northern parts of the world a hairy species of rhinoceros, but this, like the modern rhinoceroses in zoological gardens and in the wilds alike, has never attracted popular notice like its contemporary the elephant. Its horns, however, had a wide reputation in the Middle Ages as gryphons' claws.

The so-called "Irish Elk" is rather unfortunate in its name, for it was not by any

means confined to Ireland, and except for its size and the flat or "palmated" structure of its antlers had little in common with the genuine elk or moose, which fortunately still exists to-day.

The real relationships of *Cervus megaceros*, to give the big extinct deer its scientific title, are with the modern fallow-deer of our parks; it had the ordinary graceful shape of deer, not the awkward form of the big-headed, short-necked moose, and the horns were exceedingly like those of a fallow buck on a large scale, and possessed a brow tine, which is not found in the horns of the elk.

Their span, in what Mr. J. G. Millais regards as the finest existing specimen, which came from Loch Gur, in Ireland, and belongs to the Duke of Westminster, is nine feet three inches, with a breadth of two feet across the "palms," and twelve points on one side and ten on the other. Greater breadth of span has been recorded, but Mr. Millais considers that genuine specimens over ten feet across are very rare, and that these very big heads are liable to be "faked" with artificially shaped and coloured additions of wood.

In any case, it will be seen that the horns were of enormous size even in proportion to the beast itself, although its shoulder height was a couple of yards; this would make the top-most points of the antlers reach about twelve feet above the ground as the animal stood

higher than the back of any elephant, and only a yard lower than the head of some cow giraffes. The true elk would also have looked insignificant beside this extinct deer, for though it equals it in shoulder height, its short neck deprives it of majesty of carriage, and its span of antlers is barely half that of the giant fallow-deer's, while they are far less graceful in form.

What the hide of this great deer was like is unknown, but it is not likely that it was spotted and smooth like the fallow-deer's, as all the largest deer at present existing are self-coloured and inclined to shagginess about the neck, at any rate in the males.

But it must have been far the most grand and beautiful animal which has ever existed, since no other creature combines gracefulness and size in the same way; while its strength must have been equal to resisting the attacks of any creature in fair fight, for the ordinary red stag has been known to beat off a tiger enclosed in an arena with him, and the moose can kill a wolf with a single blow of his hoof.

The evidence that man hunted and killed this grandest of all big game rests on the discovery of bones bearing evidence of human handiwork; for instance, Mr. Millais has a skull showing a cut evidently made by a stone axe, and Mr. Ussher has discovered bones split for marrow among human remains in a cave

in Waterford. There is also the case of a corpse found in Irish peat that was wrapped in clothes supposed to be of the giant deer's hide, though no relic is in evidence to prove this ; but there is no doubt that in Ireland, where the beast was commonest, it survived till the human period.

Unlike most types of animals which are found both here and abroad, the giant deer attained a finer development in our country than elsewhere. It was especially common in Ireland, but did not range farther north in Great Britain than Perthshire, and of the English specimens the preservation is not good, owing to the hard ground in which they are found. Those dug up from the Irish bogs are the best. They are sometimes as little as seven feet below the surface of the peat ; but the majority are found in the shell-marl underlying this vegetable layer. Several perfect specimens have been found, and skulls and horns are quite common. The Continental race or variety had a wide range, extending through Europe to Siberia.

There has been a suggestion made that the great Irish deer was domesticated by man, but however this may be, there seems to be little doubt that such domestication occurred in the case of the beast now to be noticed.

The strangest and most remarkable of the extinct animals of South America were the

gigantic ground-sloths, of which the Megatherium was the best known. These beasts combined the structure of ant-eater and sloth, having molar teeth like sloths, while the ant-eaters are toothless, but, on the other hand, having well-developed tails, not rudiments like those of the sloths. Their feet also were formed in such a manner as to enable them to walk like ant-eaters, the sloths being only able to crawl when on the ground, their proper position being hanging upside down on the branches, where they are comparatively active. The ground-sloths are supposed to have been vegetarians like their climbing relatives of the present day, but instead of going up trees for the leaves, they sat on the ground and pulled down the boughs with their powerful fore-claws, or even dragged down small trees bodily, not an impossible feat for a beast as big as a rhinoceros.

Dr. Moreno, who had always believed that man was contemporary with these monsters, having discovered human remains in similar condition of preservation to theirs, found in 1897, at Consuelo Cove in Last Hope Inlet in Patagonia, a piece of dried skin which contained small encrusted bones similar to those known to belong to the fossil ground-sloth Mylodon. This had been found in a cave in the neighbouring Cordilleras, and it was still covered with thick hair of a light yellowish brown colour, and altogether did not seem to be remarkably

ancient; at any rate, the owner may well have been contemporary with man, for in 1877 Dr. Moreno had found in another cave, under similar conditions, a mummified human body, still showing hair on the head. He regarded the beast, however, as long since extinct.

The piece of skin in question was three years later described before our Zoological Society by Dr. Smith Woodward, who also commented on the fresh appearance of the specimen, and later in the same year he was able to communicate more details about this extinct animal, Dr. Rudolph Hanthal, geologist of the La Plata Museum, having made further researches in the original cavern, which resulted in some very interesting discoveries. Not only was another piece of skin found—though this was not in such good condition as the first, and had lost most of the hair—but bones belonging to three different specimens of what was undoubtedly a ground-sloth turned up as well. These also looked remarkably fresh, and even had shrivelled remnants of skin and gristle attached to them.

Moreover, there were found plenty of droppings of the animals, and an accumulation of cut hay, suggesting that the beasts not only lived in human times, but were actually kept and artificially fed by men. Human remains were indeed represented by a shoulder-blade and two bone awls, and the skull of one of the big beasts exhibited such injuries that there

was "no doubt that the animal was killed and cut in pieces by man." The cave was, in fact, a stable in which these queer cattle were stall-fed by some primitive race, and examination of the droppings showed that the food had consisted of grass.

An expedition was promptly sent out to Patagonia, financed by Mr. C. A. Pearson, and led by Mr. Hesketh Prichard, to try to find if these beasts still existed anywhere, but no results were obtained, thus confirming the view that had been expressed by Dr. Moreno that they had long since disappeared. At the same time, as Mr. Prichard says in his book *Through the Heart of Patagonia*, it is just possible that the Mylodon may exist in some remote part of the forests of the Patagonian Andes, hundreds of square miles of which are still unexplored; though in his researches into the forests he found that there was a remarkable lack of animal life, even of the smaller kinds, which does not look promising for the ultimate discovery of anything as big and sensational as a ground-sloth, for, as Mr. Prichard says, where there are large animals, there are sure to be plenty of smaller ones as well.

The so-called sabre-toothed tiger seems to have been contemporary with man in America; it was a large cat with huge upper tusks like a walrus, but it had a short tail, and we do not know that it was striped.

II

BEASTS EXTINCT IN HISTORIC TIMES

We now come to the animals which are definitely known to have disappeared during times of which we have historical knowledge; these are, as it will be seen, but few in number, and may be treated in pretty full detail.

Among the animals that have become extinct during the historic period, the Arctic sea-cow, the *Rhytina* of naturalists, is certainly that of most scientific interest, as well as the one which would have been of the greatest use to humanity if we had allowed it to survive.

It was a member of the small group of beasts known as *Sirenia*, still represented by the few species of manatees and dugongs, and, of course, shared their general characters; that is to say, it was a water animal—never coming ashore of its own accord—without hind limbs, and with a generally fish-like shape of body and a broad, flat, horizontal fin at the end of the tail. It was, however, like the other sirenians, not so fish-like in shape as the cetaceans or whale tribe—to which the sirenians are not related—and further approached land mammals in having plenty of hair about the mouth, though, as

in the rest of the group, there was none on the body. It was discovered through the shipwreck, in 1741, of Bering's exploring party on the Commander Islands, the particular island being what was afterwards called Bering Island, after the leader of the expedition, the only other island of the group being Copper Island, which is smaller.

The shipwrecked party had to stay on the island for ten months, and G. W. Steller, the surgeon of the party, who was an excellent observer, has left a most valuable description of the appearance, habits, and anatomy of the beast, in a paper written in Latin and published in his paper on Sea Beasts, in the *Proceedings of the Academy of Petropaulovsk*, volume II, dated 1749.

These observations reflect the greatest credit on Steller, for those of the anatomy of the beast were carried on under the greatest difficulties. The subject was far too big to be handled comfortably by one man, and the party was so preoccupied in making a vessel to get away on, that, as he tells us, he could only get help by hiring the men for an hour at the end of the day at his own expense, and then they proved very butcherly anatomists, while he could not afford to criticize their methods for fear of losing what slight assistance they were able to give him. Moreover, he was badly worried in this work, so he tells us, not only by the surf and the miseries of the in-

clement climate, but by packs of "most rascally" Arctic foxes, who not only mangled the carcase he was dissecting, but bolted off with his paper, books, and ink. Altogether the task was the very opposite of that of the modern club-fed anatomist, at home in his well-appointed laboratory with proper assistance.

The sea-cow was a huge brute, reaching eight thousand pounds in weight, and measuring as much as twenty-four feet eight inches in length, with a girth round the thickest part at the middle of the body of twenty feet. Its head and mouth were small for the size of the body, and the tail fin, which was broad and forked as in the dugong, not rounded as in the manatee, was six and a half feet across.

The body was covered by a very thick hide—no less than an inch thick; it looked more like the bark of an aged oak than the skin of a beast, being hairless, rough, rugged, and pimpled, and it was so hard as hardly to be cut by an axe or pierced by a harpoon. The back was comparatively smooth, however, only marked by transverse wrinkles, but the sides were particularly rough and pimply, and bore many raised, saucer-shaped excrescences like fungi, especially about the head. This crust-like outer skin was made up of small tubules packed together and resting on the true skin. These tubules gave off a thin, watery mucus, especially on the flanks and head, which re-

mained wet when the animal had been lying some hours on shore, while the back got dry. It never, by the way, went on shore of its own accord, like the manatee. The thick cuticle was evidently a protection against injury and changes of temperature, for Steller noticed that in the carcases cast up on shore, which were especially to be found in winter, that the grazing off of this outer skin against the rocks had evidently been the cause of the animal's death.

The colour of the hide, while the beast was wet, was blackish brown like the skin of a smoked ham, but looked all black when dry; the upper lip was white and clad with white bristles. Some specimens had rather large spots and streaks of white, the colour reaching the true skin as well as appearing on the surface.

The roughest part of the hide, about the head and chest, was badly infested with insects, which often bored through the epidermis down to the true skin, and caused the growth of warts.

The small mouth was overhung by a large, thick, semicircular upper lip, fourteen inches broad; the bristles on it were four or five inches long. The under lip was seven inches broad, and heart-shaped, without bristles; but along the junction of the closed jaws was a dense growth of bristles, serving to keep the food in the mouth while any water taken in

flowed out. These bristles were as thick as pigeons' quills.

Both lips were divided into an outer and inner portion, the inner part being rough like a calf's tongue; with these lips, which were very movable, the animal grazed like a horse or ox, tearing away the seaweeds, the bristles on the lips serving instead of teeth to give them a hold. They were able to shear off the softer parts of the seaweeds from the stalks as neatly as if this were done with a knife, the lips being much stronger and harder than those of land animals, so much so that neither boiling nor any other treatment would make them fit for human food.

There were no true teeth in the jaws, and the food was chewed by means of two strong white bony masses, or fused teeth, one situated on the palate and the other on the lower jaw. Their structure was full of canals like a sponge, and their surfaces ridged like millstones, the ridges of either side meeting in points in the middle, according to the illustration given in Steller's work; they thus were well fitted to supply the place of the absent grinders.

The tongue was like an ox-tongue, and a foot long, but it lay so far back in the jaws, so as not to interfere with the action of the curious false grinders, that it might easily have seemed to be wanting altogether, and could not be pulled far forward.

The nostrils were on the top of the head, and

were two inches wide; the eyes were black, only as large as a sheep's, set exactly between the end of the snout and the ear-opening, and had no eyelashes or eyelids, only appearing through a round hole in the skin which could be closed altogether, and was only half an inch across. The ear-hole was also so small as only to admit anything as thick as a fowl's quill.

Although the neck was very short, only half the length of the head, it was noticeably narrower than the head at the back, and had some flexibility in the living animal, although in the dead carcase it looked stiff.

The body bulged very much in the middle, and narrowed suddenly towards the neck and tail, and the belly looked like an inflated bag. The tail fin was hard and stiff, of a substance like whalebone, and jagged at its end.

But the great peculiarity that distinguished the beast from both land and amphibious animals, as Steller says, was the formation of its fore-feet—the hind ones being absent as in its allies. These limbs were twenty-six and a half inches long, and had no signs of toes or nails, ending short at the bones of the wrist, which were covered with tendons, ligaments, and skin, like the stump of an amputated human limb; only the outer skin was there much thicker, harder, and drier, so that the ends of the feet were rather like the hoofs of a horse, only more pointed, and so more suited for digging. These hoofs were smooth

and rounded above, flat and slightly hollowed below, where they were thickly covered with half-inch bristles like a brush.

In one specimen Steller found this hoof-like end of the foot cloven as in an ox, but he thought this was simply an accidental malformation, as the division did not go deeper than the surface skin, which was liable to split.

With those curious fore-feet the sea-cow swam, crawled along the bottom, held on to the slippery rocks, tore the seaweed and sea-grass from the rocks like a horse pawing with his hoofs, resisted violently when harpooned, and caressed its mate. Steller says nothing about its embracing its young with them, though it had its nipples on the breast like the manatee, which nurses its young with its fore-paws; but in this beast the feet end in long flexible paddles, containing the usual bones of the toes.

Steller's account of the habits of the sea-cows is very full and clear, and I am here translating almost all of it. He says they liked sandy shallows, and especially sought the mouths of streams, attracted by the influx of the fresh water. They were always in herds, the adult animals being careful to surround the immature specimens and calves in the flanks and rear, keeping them in the middle of the flock, and thus taking them to feed; at high tide they came so close inshore that he could not only

reach them with a stick or spar, but even stroke their backs. If more roughly treated all they did was to move farther out, but they soon forgot the injury and came back again.

The families, consisting of a male, adult female, and their small calf, generally kept together; he thought that they lived in pairs and had but one young at a birth—at any rate, he never saw the female attended by more than a single calf. They appeared usually to have their young in autumn, after what appeared to be more than a year's gestation.

They were very greedy animals, continually on the feed, and eating so greedily that their heads were constantly under water; they cared so little about their safety that one could go about among them either in a boat or without one, and choose at one's ease any of the flock to harpoon. All they did when grazing was, every four or five minutes to raise their nostrils out of water and expel the air from their lungs with a little jet of water and a snort like a horse; but while feeding they slowly moved one foot after another, and so half swam gently, and half walked, as it were, like oxen or sheep feeding. Half of their bodies, the back and sides to wit, were always above water, and while they grazed the gulls used to perch on their backs, and regale themselves on the parasites which harboured in the skin, just as crows feed on those of pigs and sheep.

They did not feed promiscuously on all sorts

of seaweed, but especially on four kinds, one with cabbage-like leaves, a club-shaped kind, one like an ancient Roman shield, and a very long one with undulated margin; and where they had been feeding for one day great heaps of stalks and roots could be seen thrown up by the sea.

When they were full-fed some of them took a nap, floating on their backs, but they drew off farther from the shore to avoid being stranded by the ebbing tide. In winter they were often drowned by the floating ice, or perished by being caught in the surf and dashed against the rocks; at this season they got so lean that not only was their backbone visible, but their ribs also. In spring they mated, after a great deal of sportive chasing.

They were caught with a huge harpoon, like the head of the fluke of an anchor, to an iron ring at the other end of which a very long and strong line was fastened. A strong man took this harpoon, and got into a boat with four or five others. With three or four rowing and one steering they rapidly approached the herd; the harpooner stood in the bows holding the harpoon and launched it as soon as ever the boat was near enough, upon which thirty men on shore took the other end of the line and held the animal, which they then drew shorewards, not without great difficulty on account of its violent resistance. Those in the boat meanwhile kept their position with another rope (pre-

sumably the other end of the line, which was fastened to the harpoon by its middle) and wore out the beast by frequent strokes till it was killed by stabbing with dirks, knives, and other weapons, and drawn on shore.

Some cut huge pieces from the beast while still alive, its only protest being to move its tail vigorously and to struggle so violently with its paws that great pieces of the skin often flew off, while it breathed hard and groaned, as it were, and the blood spouted on high like a fountain from its wounded back, whenever the head came above water and a fresh influx of air into the lungs drove the blood out.

The old and very large animals were more easily caught than the calves, because these were much more vigorous in their movements, and even if the harpoon did not break, the skin tore and thus set them free, which happened more than once.

As soon as any one of the beasts was harpooned and began to struggle, its comrades in the herd immediately came up and tried to help the captive. Some, with this idea, tried to capsize the boat with their backs, others bore on the line and strove to break it, or struggled by beating it with their tails to drag the harpoon from the back of the wounded animal, in which attempt they sometimes succeeded.

A remarkable proof of their intelligence and affection for their mates was that a male, after he had vainly tried with all his strength

to free his female, which had been harpooned and was being dragged ashore, and had for this suffered many strokes from the hunters, nevertheless followed to the shore, and several times rushed suddenly like an arrow to her, dead though she then was. On the next day when they came at dawn to cut up the meat and carry it home, they again found the male lying near his mate, which Steller also saw on the third day, when he had come by himself for the purpose only of studying the intestines.

The sea-cow was mute; the only sound it emitted was its hard breathing and the sighs it uttered, as it were, when wounded. Steller could not say what powers of sight and hearing it possessed, but it could not see or hear much, as it generally kept its head under water, so that it seemed to neglect the use of these faculties.

He considers, reasonably enough, that the remarkable tameness of these animals, as compared with the wariness ascribed by our countryman Dampier to the American manatee, was due to the lack of human disturbance, just as otters, seals, and Arctic foxes in this desert island of Bering had, until his party's arrival, never been disturbed, and were killed without any trouble, but soon became as wild as the American manatee.

The fat under the skin of the sea-cow was in most places a palm's breadth in thickness, firm and white, but if exposed to the sun turning

to the yellow tint of May butter. Its smell and flavour were so good that the fat of no other sea beast could compare with it; indeed, it was far better than that of land animals. Besides, it could be kept for a long time, even in the hottest weather, without getting rancid or smelling badly, while when rendered out it was so sweet and savoury that Steller's people never felt the want of butter, and it could be used for the same purposes as that substance. Its flavour was much like that of sweet almond oil, and it burnt with a clear, inodorous, and smokeless flame.

Nor was its medicinal use to be despised; it was a mild laxative, and could be drunk without provoking nausea or taking away the appetite. Here, of course, one must allow something for the cold climate and the taste of Russians for oil, but it is evident that the sea-cow's grease was of very superior quality. The fat of the tail was of harder consistency and more delicate when tried out.

The meat was coarser-fibred than beef, and redder than that of land animals; and was remarkable in that it could be kept a long time in the open air in the hottest weather without smelling bad, in spite of the attacks of numerous maggots.

Steller thought that this was due to the fact that the animal fed on seaweed which contained some sulphur and much sea-salt and nitre, which hindered putrefaction, as salt does

when sprinkled on meat, the more so as this salt was more intimately mixed with the flesh in conjunction with the sulphur.

While this sea-cow meat took a lot of cooking, when done it was very good, and not easily to be distinguished from beef. The fat of the calves was hard to tell from fresh lard, but their flesh was just like veal; it soon became tender on boiling, and, like that of a young pig, swelled to double its bulk during the process.

The sinewy blubber about the head and tail could hardly be softened by boiling; but the meat of those parts was much better than that of the belly, chine, and flanks; the common idea that it could not be salted was incorrect, for it took salt so well that it became just like salt beef and was very good eating.

The internal organs—heart, liver, and kidneys—were too hard, and Steller's party set no store by them, as they had plenty of the meat. There were so many of these animals about this one island that the natives of Kamtchatka could live on them entirely.

Man, indeed, seems to have been the sea-cow's only animal enemy, except the lice which infested it, which Steller describes as transparent white or yellowish insects, and some parasitic worms he found inside it; but from the care the old animals took, as he says, to surround the younger ones, it is very likely that, like most sea animals, they had to dread the attacks of the grampus or killer-whale. At

any rate, the storms of winter and the difficulty of obtaining food at that time seem to have been the chief check on their increase until the advent of civilized man; though, from the fact that they were apparently only found about the shores of Bering and Copper Islands, it has been inferred that the sea-cows represented a species which had already seen its best days, or they would have had a more extended range.

This is the idea of Dr. L. Stejneger, who has discussed the extermination of the beast at length, and has himself spent a year and a half on Bering Island, and so knows the locality well. He concludes that when the island was discovered there could not have been more than fifteen hundred of the animals about it; suitable feeding-places were not to be found everywhere, and he noted only about fifteen of such spots. As he says, if each of these were visited by a hundred sea-cows on the average, and those broken up into herds, they would give the impression of a large number.

In any case, it is abundantly evident that such a useful beast as the sea-cow was too good to live—among thoughtless humanity.

When Bering's expedition got back, others went out to hunt the fur-bearing animals, and lived on the meat of the sea-cows in the meantime. More than half of these parties wintered there, with the express intention of victualling with sea-cow beef for further journeys of two

years or more. No less than twenty vessels thus stopped there, each for six months, or usually longer, with crews of at least thirty men to be fed. Others wintered on Copper Island, and many no doubt were unrecorded. Thus these animals, whose number was from their nature and that of their surroundings strictly limited, as they increased slowly and had a hard time of it in winter, had to support a human population which, though temporary, was quite considerable under the circumstances.

Moreover, the provisioning, extensive as it was, was too often conducted in a very wasteful manner. Jakovleff, a Russian mining engineer, who went to prospect for copper on Copper Island in 1754, mentioned that the fur-hunters used to try to capture sea-cows for food single-handed, by sneaking up to animals lying close inshore and spearing them. The beasts, since caution was necessary, were evidently not quite so confiding now as they were in Steller's time, but the hunters often succeeded in striking them, though rarely in killing them outright. The natural result of this was that the stricken brute got out to sea, died there, and more often than not only drifted back when too far gone in putrefaction to be of any use, even if recovered at all. This of course entailed much unnecessary slaughter, and Jakovleff in the year following his expedition, petitioned the authorities in Kamtchatka to prohibit this method of hunting, to save the sea-cows on

Bering Island, as those on Copper Island had already gone. In fact, he could not winter on this place of his objective for that very reason.

Now Jakovleff said that one sea-cow would feed thirty-three men for a month, and as Dr. Stejneger calculates that 670 men wintered on Bering Island between 1743 and 1763, staying, on the average, ten months, this would mean, he concludes, the sacrifice of about 205 animals. Add to this 400 men who provisioned for long journeys and would need about 290 animals for an average time of twenty-four months, the total would be 495 beasts killed, without reckoning those which were lost as above described.

Dr. Stejneger reckons these as five times the number actually used, giving a total of 2475 killed up to 1763, nearly 1000 over what he estimated as the stock existing in Steller's time. Even if the number lost were overestimated to a considerable extent, this is quite a big enough figure to account for the fact that the sea-cows vanished from Bering Island, as they had done from Copper Island, before many more years had passed.

After 1763 little is heard of Bering Island, and Dr. Stejneger thinks that the small attention now paid to it points to the fact that the sea-cows and fur-bearing animals had been reduced below workable numbers. The foxes would not suffer so badly as the big, helpless brutes, and a party who went to hunt them in

1767 or 1768 seem to have killed the last sea-cow, for it was in the latter year that the last specimen was known to have been killed. At any rate, in a list of the animals given in 1772 by Dmitri Bragin, no sea-cows are mentioned, so that there can hardly have been any remaining. Thus in twenty-seven years from its very discovery this unfortunate beast was altogether exterminated.

Although the cloven-hoofed animals have been esteemed as food in all times, besides being useful providers of hides, and have therefore been more persecuted throughout the ages than any other beasts whatever, nevertheless, only one of them has become completely extinct in historical times, and that little more than a century ago.

This was the blue-buck of the Cape, a near relative of the handsome sable antelope and the powerful and savage roan antelope—indeed, it is the only other member of the genus *Hippotragus* to which they belong, and is scientifically known as *Hippotragus leucophaeus*. Five mounted specimens of it still exist in museums, but not in any such institutions in this country, although the British Museum has a pair of horns. These horns are of backwardly curved shape and surrounded by raised rings to within a short distance of the point, like those of the sable and roan antelopes.

The beast, however, is not so large as these, a

male specimen in the Paris Museum measuring forty-five inches at the withers, whereas the sable, which is smaller than the roan, stands over four feet ; his horns are twenty-one and a half inches long round the curve. The female, which also has horns, is smaller, a specimen of this sex in the Vienna Museum measuring forty inches in shoulder height. The horns are more like those of the roan antelope than those of the sable, which has them far longer proportionately than either of the others.

The colour is very different from that of the sable and roan, which in addition to the general tint indicated by their names have conspicuous white and black markings on the head ; the blue-buck is of a blue-grey tint nearly all over, shading into a whitish tint below, and only relieved by a brown patch on the forehead. The hair on the ridge of the neck is short and set forwards, but does not form a conspicuous mane as in the roan and sable antelopes.

The colour, from what Kolbe says in the abstract to be quoted directly, was much brighter in the living animal, which was no doubt a very handsome creature ; blue-grey is a colour which is very apt to fade in museum specimens. In any case it is a rare tint among wild beasts, and the only other antelopes which show it are the male nilghai of India and the brindled gnu. The little South African antelope which now has the same name of blue-buck is a very different creature, one of the duikers

(*Cephalolophus*); it is only about as big as a hare, with very short horns, and its colour is not by any means of a very bluish grey.

The first mention of the real original blue-buck is found in Kolbe's work *The Present State of the Cape of Good Hope*, volume II; I quote from Medley's quaint translation from the original German, published in London in 1731:—

"The Blew Goats are shap'd like the Tame, but are as large as an European Hart. Their Hair is very short and of a delicate Blew; but the colour fades, when they are kill'd, to a blewish grey. Their Beards, which are pretty long, add not a little to their Comliness." This sounds strange, because the specimens of the blue-buck we know have shown hardly any throat-fringe, less than the roan and sable; but perhaps the beast grew a beard along the jaws in winter only, like the wild horse.

"Their hornes," he goes on, "are not long in Proportion to those of other Goats, but they are very neat, and run very curiously up in Rings till within a little of the Point; which is streight and smooth. Their Legs are long, but not out of Proportion. Their Flesh is well tast'd, but rarely fat. And they are rarely kill'd but for the sake of their Skins; which are as good as those of Deer. Their Flesh is generally given to the Dogs. These Goats are only to be met with far up in the Country."

Although the beast was evidently known in

the quite early days of Cape colonization, it was not till 1766 that it received a full scientific description, and that not from a Dutch naturalist, as one might have expected, but from Pallas, a Russian; this was published in his *Zoological Miscellanies*. He says he had seen many skins sent from the Cape.

Buffon, on the information of Allamand, mixed it up with the Siberian gazelle; in this way a figure of the real blue-buck got published under the name of tzeiran, which really applies to this Asiatic gazelle. The English naturalist Pennant mentions it in his *History of Quadrupeds*, published in 1781, as the blue antelope, giving the reference to Pallas's description, and describing it anew himself from a skin which he bought at Amsterdam, brought from the Cape of Good Hope. "I was informed," he says, "that they are found far up the country, north of that vast promontory, which I find confirmed by the late journies. It is called by the Dutch the *Blauwe Bock* or blue goat. This is the species, which, from the form of the horns and length of the hair, seems to connect the goat and antelope tribes."

He says the colour when alive was a fine blue, of a velvety appearance; when dead, it changed to a bluish grey, with a mixture of white, and that the hair was long, which directly contradicts Kolbe, as will be noted. There was probably some seasonal change that has never been properly recorded, so that the

animal would have had long hair in the winter and a short coat at other times.

The Swedish naturalist, Sparrman, who visited and travelled in South Africa, says, in his *Voyage to the Cape of Good Hope*, under the date January, 1776: "The *blaauw-bok* is also one of the large species of gazel, which probably are only to be found in the same district with the gazel just described [he means the gemsbuck, which he considered to be peculiar to the north-western part of Cape Colony]; excepting, perhaps, a single one, which may happen now and then by great chance to stray from these parts: for at Krakeet River I found they had preserved a skin of this animal. The colour of this creature when alive is said to resemble that of blue velvet, but when dead it is of a leaden colour."

He mentions the accounts of Buffon and Pennant (his own book having been published, at any rate the second edition, in 1786), and says that the animal had long white hair on the belly. The velvety appearance noticed by Sparrman and Pennant, which Levaillant—not a very good authority, however—says, as will be noticed in the quotation next to be given, he did not observe, was very possibly due to a gloss on the coat like the lilac gloss to be seen on the bontebok and blesbok, which gives them a tint quite different from that of any other beasts.

The French naturalist, Levaillant, visiting

the Cape in 1781, not only saw but shot a specimen a few days after leaving Cape Town at a place called " Tiger-hoek."

He says that his Hottentot hunter suddenly stopped him and told him that he saw a " Blawe-Bok [blue goat] lying down. I looked in the direction he indicated but could not see it. He asked me then to keep quiet and not move, assuring me that he would get me the beast. He at once proceeded to make a detour, crawling on his knees ; I kept him in sight, but could not understand this performance, which was quite new to me. The beast got up and grazed quietly, without moving away from the spot. I took it at first for a white horse, for, from the spot I was in, it looked all white (up to then I had not met with this sort of gazelle) ; I was undeceived when I saw its horns. My Hottentot continued to crawl on his stomach ; he got so close that it was the work of an instant to take his aim at the beast and fire ; the gazelle dropped to the shot. I rushed to the spot and enjoyed the pleasure of studying at leisure the rarest and most beautiful of African gazelles." He further says that he preserved the skin carefully, and goes on to say: " During my residence in Africa, I only saw two of these gazelles and one other which was brought to the Governor, some years afterwards, during one of my visits to Cape Town. They came, like my specimen, from the valley of Soete-Melk, the only locality in which they

are found. I had been told that I should see some in the Great Namaqua country; but in spite of all my inquiries and investigations I was disappointed in this hope. All the savages told me they did not know it. I had been told also that the female had horns as well as the male; I can say nothing about this, because all three I had seen had been of the latter sex.

"The principal colour of the animal is a light greyish blue; the belly and the inside of the legs are snow-white; the head in particular is handsomely marked with white.

"I did not notice that this gazelle looked like blue velvet, and that its skin changed colour after death, as M. Sparrman says it does; alive or dead, it looked just the same to me, and the colour of the specimen I brought back has never altered. I have seen another specimen at Amsterdam, which had been there more than fifteen years."

The animal, which apparently was never found outside Cape Colony, had obviously been for some reason or other much reduced in numbers since Pallas's time; very likely the large numbers of skins he mentions as having been brought from the Cape pointed to an extensive slaughter of these antelopes for hides, which had already begun in Kolbe's time.

At any rate, its extinction was at hand, for Lichtenstein, in 1803, speaking of the mountains near the Buffalo-jagt River, says that although

there was plenty of other game, the blau-bok was "almost exterminated," none having been seen since 1800, when one was shot, the skin of which went to Leyden. Later on in his book of *Travels*, he mentions that the blau-bok was said to occur occasionally, though almost exterminated elsewhere, in the inner valleys of the mountains between Stellenbosch and Graaf Reinet.

There seems to have been some doubt as to the exact last specimen of the blue-buck seen alive, for we find Lichtenstein saying, a couple of years after the publication (1811–2) of his *Travels*, when writing a general review of the antelopes, that the Berlin specimen was the best known to exist, and that this was shot in 1799. He adds that it used to be found only in the then already populous Zwellendam district.

Even the specimens which remain to confirm the descriptions of the writers who have been quoted here did not prevent some naturalists maintaining that the blue-buck was merely a young roan antelope, but this view is now given up, and never found universal acceptance. Besides the Paris and Vienna specimens mentioned above, there are others at Leyden, Stockholm, and Upsala.

The quagga of South Africa is the best known of animals which have become extinct in historical times, because its disappearance is

so very recent that it is within the memory of people still living ; but it is the least interesting, because it had not the marked distinctness of the others I have been speaking of, but was so closely allied to the existing Burchell's Zebra, that Mr. Selous, the well-known hunter, only considers it as the extreme southerly form of that widely ranging beast, which exhibits various local races in different parts of its range, losing the stripes by degrees as one travels from north to south. He points out, in his contribution on Burchell's Zebra in Rowland Ward's *Large and Small Game of Africa*, that the Boers called all the forms of Burchell's Zebra quaggas—" pronounced kwā-hā, in imitation doubtless of the cry emitted by the animal, which sounds like the syllables kwa-ha-ha, kwa-ha-ha, quickly repeated," as anyone may hear at the Zoo.

The quagga was the first to be known of this type of zebra, and was originally described by Edwards in his *Gleanings* as the female zebra, the male zebra being what we now call the mountain zebra, which was then *the* zebra, though now itself a rare animal verging on extinction, while the Burchell's is the kind usually seen. The quagga was described as *Equus quagga* by Gmelin, but Mr. R. I. Pocock, who follows Mr. Selous in considering it as merely an extreme race of Burchell's Zebra, points out that Daniell, who figured and described it in his *African Scenery*, published in 1904–8, was,



THE MOUNTAIN ZEBRA.

from his description, evidently acquainted with several types of quaggas, some of them much more marked than that which has always borne the especial name of quagga, as may be seen from the description requoted below.

"This species of Wild Horse, which the Hottentots call Quahkah, is one of the most common and abundant of the larger animals that are met with on the barren plains of Southern Africa. It is generally found in numerous herds that are mostly accompanied by a few hartebeests and ostriches. They are tolerably swift; but the Boers sometimes succeed by stratagem to take them alive by throwing the noose of a rope over their heads. By domestication it soon becomes mild and tractable, and might be rendered extremely useful by patient training; yet, abundant as they are in the country, there are few instances of their being put to harness. They are stronger than the mule, live hardily, and are never out of flesh. They are variously marked; some with waved stripes on the neck only, others with bands across the shoulder, others marked on the haunches, somewhat like the zebra, which gave rise to an idea that was long entertained of its being the female of that animal; from which, however, it differs in almost every particular, except in the stripes, being in its shape infinitely more beautiful. The large head, the long ears, and the slender legs of the zebra partake very much of the character of

the common ass. The mane of the quahkah is curious, appearing as if trimmed by art. This animal is found on all the plains behind the first range of mountains beyond the Cape Peninsula."

The shape of the quagga, as Daniell says, was far handsomer than that of the donkey-like mountain zebra; in fact, it approached more nearly to the horse type, as does that of Burchell's Zebra. But from the accounts of other writers who knew the animal, it would seem to have been still more horse-like than that species; although, curiously enough, it was the mountain zebra that the Boers called the wild horse (*wilde paard*).

What is taken as the quagga is a brown animal, with white legs and tail, well striped on the head and neck either with black on a brown ground or with brown on a fawn ground, but with the stripes fading away altogether on the back or only represented by broken mottlings. There were never any distinct bands on the hind-quarters as was the case even with the original white-legged race of Burchell's Zebra—the typical *Equus burchelli*, which is itself now apparently extinct, and occupied a range just north of the quagga's.

There is thus a link missing between the brown and the striped "quaggas"—the bonte-quaggas, as the Boers called the Burchell's Zebras when they wanted to distinguish them—and as the two species both occurred in the

Orange Free State, but were said to keep separate, it is just possible that the two could claim a distinction of species. For when two creatures only differing in colour meet and associate they proceed to interbreed, and if the colours mix in consequence there is, of course, no distinction of species : at any rate, this often takes place with birds, as in the well-known case of the black carrion crow and black-and-grey hooded crow.

There are considerable differences, as Mr. Pocock points out, between the specimens, descriptions, and illustrations of the quagga which have come down to us, and these he thinks indicate different local races ; but it is just possible that occasional interbreeding with Burchell's Zebra would account for the larger amount of dark marking to be seen on some individuals and the darker stripes of others.

At any rate, the typical quagga was, according to Mr. H. A. Bryden, in Rowland Ward's publication before quoted, strictly confined to the Cape Colony, westward of the Kei River, some parts of Griqualand West, and the plains of the Orange Free State. In Cape Colony it had the plains to itself, as far as other zebras were concerned, the old original zebra having always been a mountain animal. It liked company, however, and habitually associated with the white-tailed gnu, as Burchell's Zebra, farther north, does with the black-tailed or

brindled gnu, while in both cases the ostrich came in to complete a triple alliance, no doubt dictated by considerations of safety, the bird excelling in power of sight, the beasts in scent and hearing.

The quagga, like other wild equines, was a high-couraged beast, would turn on man with teeth and hoofs if wounded, and had no fear of the spotted hyæna and wild dog, so that the Boers in early days of Cape colonization valued tame specimens as guards to their horses when out at night. It was, indeed, a comparatively easy beast to train and break in, and might easily have been made a useful domestic animal, though few attempts were made in this direction. Even in England, however, quaggas were seen in harness, for in the early part of the nineteenth century a pair used to be driven about London by Sheriff Parkins. Sir William Jardine found that one driven in a gig had as good a mouth as a horse, which Mr. Bryden says is not the case with Burchell's Zebra, which is hard-mouthed as a rule, though this animal, too, is more amenable to work than other zebras, and has been driven both over here—by Mr. Walter Rothschild—and even used in coaches at the Cape. These zebras, however, though willing, had not the stamina for sustained heavy work.

Unfortunately, however, the chief use the Boers found for the quaggas which roamed in thousands over the plains of the Cape, was to

shoot them for their meat, on which they fed their native dependents, and their hides, which they not only used at home, but exported in large numbers. Even in 1876, Mr. Bryden found old quagga-hide sacks in use among them, just after the beast itself seems finally to have disappeared, for the wild animal seems to have completely vanished by 1873, while the last specimen of the only two the London Zoological Gardens ever exhibited died in the year previous to this. Less than thirty years before immense herds were recorded by Sir Cornwallis Harris in the Orange Free State, and even in 1843 Gordon Cumming found large numbers in the north of Cape Colony; but already the Boers were constantly at work upon them, and the Free Staters were for more than a generation, Mr. Bryden informs us, as much interested in the hide business as in their general occupation of farming.

There are a good many specimens of the quagga existing in various museums, but that at South Kensington is not by any means a good one. Fortunately, however, some photographs were taken of the last Zoo specimen by Mr. F. York, so we can form a good idea of what the quagga looked like in life. The drawings of it which exist are mostly very poor; those given by Daniell and Sir Cornwallis Harris, for instance, although purporting to be done from living animals, are remarkably—not to say suspiciously—alike, and are not in

the least like any *wild* animal of the horse tribe so far as shape goes, but more resemble a cart-horse with a hog mane and stripes on its head and neck.

The quagga, as might have been expected, would interbreed with the horse, and there was a particularly celebrated case in which a mare of Lord Morton's, having borne a mule foal to a quagga, afterwards bore to a horse another which bore traces of stripes. Subsequent experiments by Professor Cossar Ewart with mares which first bred to a Burchell's Zebra and then to horses have not produced similar results, and this supposed influence of the first sire, so much believed in by dog-fanciers, is now very much doubted in scientific quarters, though, of course, it takes an unlimited amount of evidence to prove that such a thing is impossible.

Owing to the custom, above alluded to, of the Boers, in calling the Burchell's Zebra, which was not known till ten years after the quagga had been described, by the same name as this its very near ally, rumours that the quagga was not yet extinct have often been circulated, but there is now no doubt of this.

Monkeys, if not exactly on the most cordial terms with us, their superior relatives, have not been on the whole much persecuted; yet one owes its extinction to human agency.

The history of this monkey, known as Kirk's

Guereza, is so very short and sad that it reminds one of the baby's epitaph :—

> "I was so very quickly done for,
> I wonder what I was begun for."

In the Proceedings of our Zoological Society for February 27th, 1868, Dr. J. E. Gray of the British Museum published a short description, illustrated by a beautiful plate by the great animal painter, J. Wolf, of a new species of monkey which he had found in a collection of animals preserved in spirits and sent from Zanzibar by Dr. (later Sir) John Kirk.

This monkey belonged to the *Colobus* group, which are closely related to the lungoors of India (*Semnopithecus*); but the guerezas, as the *Colobi* are called, after the name of the best-known species, an Abyssinian one, have no thumbs, which at once distinguishes them. Like the lungoors, they are nice monkeys, with slender, elegant forms, agreeable faces, handsome long fur and long tails, and much more pleasant and less mischievous manners than the commoner monkeys—the bunders or macaques of India and the green monkeys or Cercopitheci of Africa. They are themselves purely African, just as the lungoors are Asiatic, and like the lungoors, keep almost entirely to the trees and feed mostly on leaves. Their fur, however, is usually handsomer even than that of the lungoors, but it is generally black and white, sometimes even all black, so

that the new monkey, which was named *Colobus kirki* after the naturalist who despatched it, was a very striking novelty, its colouration being of a tortoise-shell and white type, black, white, and bright bay.

The red covers the crown of the beast and its back, sides, and tail; the back of the neck and shoulders running down to the arms, the outside of the arms themselves and of the thighs, with the hands and feet, are black, while the rest of the animal—the sides of the face, underparts, and inside of the limbs—are white. Although the hair on the crown is rather long, there are not the flowing whiskers, side flounces, or tail tufts found in some of the other guerezas; but the colouring is so beautiful that Kirk's monkey was certainly one of the most handsome in the world, and might well have become a popular pet but for its unhappy fate.

It was only found in the island of Zanzibar, and in 1884, only sixteen years after its description, a note was published, in the *Annals and Magazine of Natural History*, from Sir John Kirk in Zanzibar, to the following effect: "In the *Proc. Zool. Soc.*, Feb. 1868, p. 27, Dr. Gray described a new *Colobus*, and named it after me. That monkey then was rare, but still to be had in many of the wooded districts of this island. I am not aware that it has been found in Pemba Island or on the mainland; and now I discover that, if not extinct, it has

become so rare as not to be procurable, even when I sent the hunters over the island. I have a report that it exists still in one spot which they could not reach. I think two specimens were sent to Germany some time ago; but it looks as if the animal will be lost. This is due to the destruction of forest and jungle over the island."

The end of the story is told by Sir Harry Johnston in his book, *The Kilima-Njaro Expedition*, published two years later, where he says: "Like most great men who have helped to extend the British Empire, Sir John has one dark blot on his escutcheon. Warren Hastings exterminated the Rohillas, Governor Eyre was accused of too summarily suppressing the Maroons; Sir John Kirk, more, perhaps, in the interests of British science than of British rule, has entirely destroyed an innocent species of monkey. The *Colobus kirki* had disappeared from nearly every part of the island of Zanzibar, but a rumour prevailed that it still lingered in a clump of forest as yet unvisited by hunters. Thither Sir John sent his *chasseurs* to report on the monkey's existence. After a week's absence they returned, triumph illuminating their swarthy lineaments. 'Well, did you find them?' asked the British Consul-General. 'Yes,' replied the men with glee, 'and we killed them, every one!' Wherewith twelve monkey corpses were flung on the floor, and *Colobus kirki* joined the dodo, the auk,

the rhytina, and the moa in the limbo of species extinguished by man."

Considering the feud between man and the land carnivora, it is rather remarkable that only one of these has become extinct. This is the Antarctic wolf of the Falkland Islands, which is the only native land beast, with the exception of a mouse, which inhabits this remote group; and the wonder is to find a creature of this size and type marooned by nature in this way, for the mammalian inhabitants of small islands are generally small themselves. In size the Antarctic wolf, although small for a wolf, is considerably larger than a fox; in fact, it is nearly as big as the well-known coyote or prairie wolf of North America, or, to use a more familiar beast for comparison, as an ordinary shepherd's collie. In colour it is the usual reddish black-ticked wolf-grey, but has a rather short but peculiarly coloured brush, black from about the middle to near the tip, which is white; this marking distinguishing it from any other of the dog kind. The food of this wolf is, or was, chiefly birds especially the wild geese which inhabited its native islands; these geese, which were and still are very abundant there, are the beautiful Magellan or Upland geese often kept as fancy waterfowl in our parks—the gander grey and white with black legs, and the goose chestnut and black with yellow ones. They also fed on

penguins, and on the carcases, at all events, of seals; no doubt they preyed on the seal pups when they got the chance.

The first record of the existence of these isolated wolves is to be found in Dom Pernetty's *History of a Voyage to the Malouin Islands*, which voyage took place in the years 1763–4. Here he says that the "officers of M. de Bougainville's suite were, so to speak, attacked by a sort of wild dog; this is, perhaps, the only savage animal and quadruped which exists in the Malouin Islands; perhaps, too, this animal is not actually fierce, and only came to present itself and approach us, because it had never seen men. The birds did not fly from us; they approached us as if they had been tame." Dom Pernetty was very likely right; these wolves, like their companions the birds, were no doubt simply actuated by curiosity and ignorance of man's dangerous powers; for such innocence has often been observed in the case of other inexperienced creatures both furred and feathered. But, of course, the curiosity of a carnivore, even if innocent, is liable to be embarrassing, and the early English visitors to these islands formed exactly the same impression as Pernetty's people had done. These were the men of Commodore Byron's command, who were at the islands in 1767; in his account of the *Voyage of the Dolphin*, the Commodore says that the master, who had been sent to take soundings, "reported at his return that

four creatures of great fierceness, resembling wolves, ran up to their bellies in the water to attack the people in the boat."

Bougainville, in his *Voyage round the World*, mentions this wolf as the only kind of quadruped on the islands; he says about its habits: "The wolf-fox, so-called, because it digs itself an earth and because its tail is longer and more fully furnished with hair than that of the wolf, lives in the dunes of the sea-shore. It follows the game and plans its trails intelligently, always by the shortest route from one bay to another; on our first landing, we quite believed that they were the paths of human inhabitants. It would appear that this animal starves for part of the year, so meagre and thin is it. It is of the size of an ordinary dog, and also barks like one, but weakly." He goes on to say that this wolf destroys many eggs and young birds.

Even in Byron's time war was being declared on the wolves by man, for he says that to get rid of them the grass was fired, "so that the country was in a blaze as far as the eye could reach for several days, and we could see them running in great numbers to find new quarters."

Darwin, during the voyage of the *Beagle* (1832–6), made acquaintance with these wolves, and in the work dealing with the zoology of that expedition, he says, after quoting Byron as to their boldness: "The habits of these animals remain nearly the same to the present

day, although their numbers have been greatly decreased by the singular facility with which they are destroyed. I was assured by several of the Spanish countrymen, who are employed in hunting the cattle which have run wild on these islands, that they have repeatedly killed them by means of a knife held in one hand and a piece of meat to tempt them to approach in the other. . . . These wolves do not go in packs; they wander about by day, but more commonly in the evening; they burrow holes, are generally very silent, excepting during the breeding season, when they utter cries, which were described to me as resembling those of the *Canis Azaræ*." This animal is the small jackal-like wolf or fox of Southern South America, and is said to bark, at any rate in captivity, so this statement is not inconsistent with Bougainville's account of the island wolf's voice. It is worth noting, by the way, that Byron says "they were always called wolves by the ship's company, but except in their size and the shape of the tail I think they bore a greater resemblance to a fox. They are as big as a middle-sized mastiff, and their fangs are remarkably long and sharp."

With regard to their distribution in the islands, Darwin says: "It is found both on East and West Falkland. . . . I was assured by Mr. Low, an intelligent sealer, who has long frequented these islands, that the wolves of West Falkland are invariably smaller and of

a redder colour than those from the eastern island, and this account was corroborated by the officers of the *Adventure*, employed in surveying the archipelago. Mr. Gray, of the British Museum, had the kindness to compare in my presence the specimens deposited there by Captain Fitzroy, but he could not detect any essential difference between them. The number of these animals during the past fifty years must have been greatly reduced; already they are entirely banished from that half of East Falkland which lies east of the head of San Salvador Bay and Berkeley Sound; and it cannot, I think, be doubted, that as these islands are now becoming colonized, before the paper is decayed on which this animal has been figured, it will be ranked among those species which have perished from the earth."

Just after the publication of this account, also in 1839, Colonel Hamilton-Smith, in his first volume on the Dog-tribe in the Naturalists' Library, speaks, under the heading of what he calls "the Falkland Island Aquara dog," of "seeing, in the fur stores of Mr. G. Astor, of New York, a large collection of peltry, which came from the Falkland Islands, where, according to the reports that gentleman had received, his hunters had nearly extirpated the species." An additional cause of destruction, the enmity of the sheep-owners, the islands having been chiefly exploited during the past



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half-century as a sheep-run. Mr. R. Vallentin, in Manchester Memoirs, vol. XVIII, 1904, gives the date of their final extinction as 1876, and certainly Moseley, who was at the Falklands, in the course of the *Challenger* expedition in that year, says nothing about the wolves, to which, extremely observant as he was, he would certainly have alluded if he had even heard of their existence.

It is worth mentioning that a relative of these beasts still well known in the neighbouring mainland of South America, the colpeo or Magellanic wolf—a rather more foxy animal with a bigger and entirely black-tipped brush—has also always been noted for its fearlessness of man, which it still displays, according to Mr. Hesketh Prichard in his book on *Patagonia*. He found these "wolves" astonishingly bold, permitting an approach within a few yards, and most terrible robbers of camp provisions; moreover, they were fierce enough, a male attacked by his big greyhound Tom having met the dog "with a devastating bite," and caused alarm amongst his horses. So it looks as if the fear felt by the old voyagers of the Falkland wolves may have had some foundation after all, and, on the whole, their complete extinction can hardly be a matter for very deep regret. There is a specimen to be seen in the South Kensington Museum which gives, though not in tiptop condition, quite a good idea of the species.

The only beast which has become extinct in Europe is the aurochs, or urus, which has attained considerable celebrity, it is true; but as it was simply the wild ancestor of our common cow, it cannot fairly be classed among extinct animals.

III

EXTINCT BIRDS AND REPTILES

We have come, then, to the end of the very short list of beasts which have disappeared during the historic period, and it is time to say something about the extinct birds. These are, unfortunately, quite a numerous assemblage. Lord Rothschild, in his monumental book on the subject, describes and figures more than fifty. The reasons why birds have suffered so much more extermination than beasts are two very simple ones. The first is that, as the species of birds are many times more numerous than those of beasts, there would in any case be a proportionately greater chance of some being exterminated; the second is, that birds are differently distributed over the world, often being found in remote islands, which beasts, except bats and seals, have hardly ever reached. Such birds are, of course, particularly liable to be exterminated, owing to the limited extent of their home, especially as many of them have lost the power of flight when living in such places.

It will be found that almost all of these extinct birds were island-dwellers, and so are

many of the kinds in danger to-day; but there is one consolation, that, as a whole, they were not birds of any striking scientific interest or special attractiveness, and few of them would attract notice in a zoological garden. There never was, for instance, any bird so beautiful as the peacock exterminated, nor did any of them, so far as we know, except perhaps the solitaire, show any interesting habits.

There were, however, certain exceptions to this general insignificance of these poor departed birds, and these may be treated of in detail, some of them having quite an extended reputation, such as the dodo, the moa, and the great auk. Chief of these, of course, is the dodo, whose extraordinarily quaint and ugly appearance attracted so much attention that its fate was remembered; it is the proverbially extinct creature—everyone knows the expression "as defunct as the dodo." Even Lewis Carroll brings it in, along with the white rabbit and the mock turtle, as one of Alice's animal acquaintances. The home of the dodo was on the island of Mauritius, and it was first discovered when Jacob van Neck, in 1598, took possession of the island for the Dutch. The account given by De Bry is in Latin, and reads, when translated, thus:—

"Besides which [other birds he had been mentioning] there is to be seen another larger kind, bigger than our swans, with huge heads, half covered with a skin like a hood. These

birds have no wings; where these should be there grow three or four blackish feathers. The tail consists of a few soft curled feathers of an ashy colour. We called these *Nasty birds* (Walckvogel), because the longer they were cooked the tougher and more uneatable they got. Yet their bellies and breasts were well flavoured and tender. Another reason for the name we gave them was that we could get turtle-doves, which were much better eating, to our heart's content there."

The several pictures which were subsequently carefully drawn, some apparently from living birds, bear out this account, and the appearance of the dodo has long been well known—its huge beak, hooked and covered except towards the tip with a bare skin which was continuous with that of the face, so that the scantily feathered skin of the back of the head did look like a hood; the short thick legs, with the usual four toes, three in front and one behind; the wisp of a tail, and the heavy fat body, much too big for the wings, which were not actually absent, but simply very small and useless.

But it is worth while also quoting the account of an English writer who actually saw a live dodo in London, about 1638—Sir Hamon Lestrange—who says: "As I walked London streets, I saw the picture of a strange fowle hong out upon a cloth [gap in the MS.] and myself with one or two more then in company

went in to see it. It was kept in a chamber, and was a great fowle somewhat bigger than the largest Turkey Cock, and so legged and footed, but stouter and thicker and of a more erect shape, coloured before like a yong cock fesan, and on the back of dunn or deare colour. The keeper called it a Dodo, and in the end of a chymney in the chamber there lay a heape of large pebble stones, whereof hee gave it many in our sight, some as bigg as nutmegs, and the keeper told me shee eats them (conducing to digestion) and though I remember not how farr the keeper was questioned therein, yet I am confident that afterwards shee cast them all againe." This was perhaps a Solitaire.

The pictures of the dodo, by the way, show its plumage as a sort of drab colour, with the wings and tail pale yellowish, not respectively black and grey, as the description of De Bry says. Perhaps the cock had the light-coloured wings and the hen the dark ones, but no sex difference is recorded. The beak seems to have been dark at the base, the colour extending over the face, and greenish yellow at the tip. The legs were also yellow.

It is curious that except the stones it swallowed, which are mentioned by other writers as well as Lestrange, nothing is said about what the dodo ate; their historians were much more concerned with eating the dodos themselves, and subsequent voyagers were not so dainty as Van Neck's party, for they killed

them in numbers for food, and not only ate them fresh, but salted them down for victualling. In 1602 Willem van West-Zanen's men got a couple of dozen on one day, and on another occasion twenty, after a three days' hunt, most of which were salted, for two were more than enough for a dinner for the crew; in fact, Sir T. Herbert, who saw them in 1627, said few were under fifty pounds weight. In 1638 François Cauche speaks of the dodos as birds of Nazaret, and says they made nests of herbs heaped together, and laid eggs of the size of the pelican's, which is about what one would expect. This is just as well, because Cauche, in his account, mixed up the dodo with the cassowary, which does not improve his credit as an authority. He says the egg was white, and that a stone as big as a hen's egg was laid beside it; also that the bird's cry was like a gosling's. Herbert had mentioned that the bird, as one would expect, could not run fast on account of its fatness, and that it could not fly; and P. W. Verstuffen, who visited Mauritius in 1611, said they could be caught by the hand, but those who attempted this had to look out for the birds' beaks, with which they could give a very severe bite.

Of course birds like this could not be expected to survive long unless protected, and after the Dutch colonized Mauritius in 1644, their doom was sealed; in fact, the last notice of the dodo as a live bird is in the journal of Benjamin Harry,

chief mate of the ship *Berkley Castle*, which wintered at Mauritius in 1679, and all he says is to mention: "Dodos, whose flesh is very hard"; the poor dodo's obituary notice, like its introductory one, recording this reproach and adding the insult of depreciation to the injury of extermination.

No complete specimen of the dodo has been preserved; there was one in the Ashmolean Collection at Oxford till 1755, when it was destroyed on account of its decayed condition, the authorities evidently not knowing that it could not be replaced; but the head and a foot were preserved, and are still to be seen. A few other relics exist in other museums, and a good many bones have been obtained from the Mare aux Songes, a small marsh. There is a nearly complete skeleton in the South Kensington Museum.

These remains have shown that the dodo, whose relationship gave rise to much dispute, was really a gigantic pigeon related, curiously enough, to the green fruit-pigeons of the Eastern Tropics, which are purely tree-livers. One of them, the thick-billed green pigeon (*Butreron capellii*) as a matter of fact, has a beak which is remarkably like a dodo's in miniature, though, of course, smaller even in proportion.

Another pigeon with a far thicker beak, though not so long in proportion as the dodo's, is actually also a ground bird, though able to fly well. This is the manu-mea of Samoa, and it

has been called by ornithologists, on account of its resemblance to the dodo, *Didunculus* or dodlet. I have seen it alive at the Zoo. In any case, a connecting link with the more ordinary pigeons once existed in the shape of the dodo's near neighbour and relative, the solitaire, which was found on the island of Rodriguez, a place uninhabited until 1691, when a party of French Protestant refugees, under François Leguat, arrived and stayed for two years. Leguat's account is all we have to tell us about this bird's appearance and habits, but it is a very much better one than any of those which have been given of the dodo, and skeletons which have been discovered in recent years have borne out his remarks as well as mere bones could do.

The solitaire was a big bird, larger than a turkey, high on the legs and long in the neck, with a bill somewhat on the same lines as that of the dodo, but much smaller, simply a strengthened edition of the ordinary fruit-pigeon's bill; in fact, it was not a striking feature of the bird. The wings were not so useless as in the dodo, although far too small for flight, because at the pinion-joint there was a sort of knuckle-duster, a rounded mass of bone (covered with horn in life) with which the birds fought, although they also used their bills. The wings also were used in the curious dance the birds performed, whirling round and round twenty or thirty times in one direction in

four or five minutes, during which time they made a noise with their wings like a rattle, which could be heard more than two hundred paces off, and served instead of a call-note. They had hardly any tail, and the hinder part of the body was rounded like a horse's croup. The male birds weighed up to forty-five pounds, and were usually of a greyish and brown colour; the hens, which were smaller, were either brown or blond—the colour of fair human hair, as Leguat says. The "blond" birds were no doubt semi-albinos, what our present-day fanciers call cinnamons, and it is interesting in this connection to note that cinnamon varieties of wild birds are nearly always hens.

The hens were very handsome; their sleek plumage and graceful gait so much impressed the colonists that they often had not the heart to kill them. It is not often that a hen bird is considered more beautiful than the cock, except in the few cases where her feathers are brighter; but no doubt the large male had a very coarse look, as in the case of the well-known Muscovy duck, of which the female is a handsome shapely bird as ducks go, and much smaller than her mate, though of similar plumage.

The eye was black and lively, not yellow like the dodo's, which are also, by the way, said to have been very bright, and there was no sort of crest on the head.

The solitaire was much more active than the dodo, as it was not easy to catch in the woods,

but it could not run fast enough to escape a man on open ground. From March to September they were very fat and good to eat, especially the young.

The birds were called solitaires because they very rarely went in flocks, usually being seen only singly or in pairs ; they made their nests of palm leaves on an open spot, raising a heap a foot and a half high. The egg was as big as a goose's, and took seven weeks to hatch, the cock and hen taking turns in the sitting. While breeding the old birds would not let any other solitaire come within a couple of hundred yards of the nest, but what Leguat thought particularly strange, and was sure of, as it had been confirmed by several observations, was that the old birds would only attack those of their own sex ; if the parent on duty found a stranger of the opposite sex approaching, it would summon its partner by the rattle-call of the wings to drive it away, for males would not attack females, or vice versâ.

Everybody must have observed the same sort of thing in the common cock, who is very gentle with hens, though fierce to his own sex ; and I have seen the same thing with the pretty little Indian pigmy goose or cotton-teal (*Nettapus coromandelianus*), in which the drakes would never peck the ducks. But the female solitaire must have been unusually forbearing, for I do not know of any hen bird which feels scruples about attacking a male : indeed,

such a feeling is foreign to female animals generally.

The young bird was not able to provide for itself for several months, and after it had left the nest the old bird always kept company, even when they met others of their kind. The colonists often noticed that a few days after a young bird had left the nest, a flock of thirty or forty others brought another young one to it; then the old pair joined the flock, and all went away together. Naturally the spectators often followed to see what happened, and found that the old ones afterwards went away singly or in pairs and left the two youngsters together; and equally naturally they called this the birds' "marriage."

Leguat admits that "this particularity has something in it which looks a little fabulous. Nevertheless," he says, "what I say is sincere Truth, and what I have more than once observed with Care and Pleasure." Personally, I am quite willing to believe him, for as he has given us the best account of any extinct creature after Steller's of the sea-cow, he may just as well have been right in this particular as the skeletons have proved him to be about the solitaire's wing-knobs, which are quite unique among birds, though spurs and small blunt projections on the wings are found in several species.

The solitaires fed on fallen fruit, and, no doubt, like other pigeons, which are less vegetarian than is often supposed, would eat worms,

snails, and slow-moving insects, such as caterpillars, as well; the diet of the dodo was doubtless similar, but it was better fitted for large morsels, and could no doubt tear up its food with its very powerful bill. The solitaire always had a stone in its gizzard. No solitaire was ever taken away from its native land. Leguat says, that although they were not very shy when unmolested, and in such cases would often come up to one, they sulked in captivity, would not eat, and even shed tears, though without making any noise; thus they pined to death.

The fact that they would not live in confinement, although not naturally shy, is not unexampled; our bird-fanciers, for instance, find that the common blue-tit, one of the tamest of our little birds, is very difficult to accustom to cage life. I knew one keen aviculturist who would sit up all night with a new-caught blue-tit, tempting its appetite with mealworms, or it would simply have moped and died within twenty-four hours. And the circumstance of birds shedding tears, though strange, is not incredible. Mr. C. W. Beebe, in the New York Zoo, has seen a flamingo do so, when frightened by the terrifying antics of a condor in the same aviary, although the big vulture meant no harm.

Neither was any skin of the bird sent home, apparently, and it became extinct in less than a century after the island was visited by Leguat:

human persecution would be quite enough to account for this, and the sad fate of the solitaire is particularly regrettable, for though it had not the striking ugliness of the dodo, which differs from all other large birds in being developed in the direction of bulk rather than length in all parts of its body, the solitaire was evidently a much more interesting creature.

Quite a number of bones and skeletons were got from Rodriguez during the latter half of the last century, and two of these skeletons can be seen in the South Kensington Museum.

The great auk, owing to its having been a European bird, and at once the only flightless bird and the only one which has become extinct in our quarter of the globe—or in the northern hemisphere, for that matter—has gained a reputation which is a good deal higher than its scientific interest, though from a practical point of view its loss, like that of Steller's sea-cow, is a very serious one.

As is shown by the abundant occurrence of its remains in prehistoric "kitchen-middens," it had long played an important part as a source of human food before civilization began, and to this is no doubt due the fact that it had become much scarcer and more localized in the older countries of Europe than it was on the American side, when historical records of it began to appear. For as humanity took to navigation, the great auk's loss of the power of flight began

to tell against it, since wherever it could effect a landing man could follow it and destroy it.

In appearance, except for its size, it was very similar to the razorbill, still one of the best known and most abundant of the Auk family, having a large deep bill, a heavy body, and webbed feet with only the three front toes, the hind toe being absent as in all auks. As in the razorbill, its plumage was black above and on the throat, and white below, the throat also becoming white in winter; but it had at all seasons a large white patch in front of the eyes, where the razorbill has only a white line. In size it far surpassed not only the razorbill, but all other auks, none of which are as large as the common wild duck, while the great auk was as big as a tame goose. Its wings, however, though perfectly formed, were smaller than the razorbill's, the flight-feathers being disproportionately short. They were, however, doubtless very useful as paddles, for all the Auk tribe appear to fly when under water, though on the surface they swim with their feet like all other sea-fowl except the penguins, which use only their paddle-like wings when either upon or below the surface.

The great auk, by the way, was the original penguin, its name having been transferred to what we now call penguins when these birds were discovered in the South Seas, on account of their resemblance to this flightless diver of the north; and in French at the present day the

Auks are called *Pingouins*, the penguins being distinguished as *Manchots*.

On land the great auk appears also to have resembled the razorbill, sitting erect on its heels like a dog begging, and it would seem to have also been able to stand up on its toes and walk in this position like its small ally, for if it had shuffled along on its heels as the guillemot usually does, it could hardly have got along as fast as a man walking, as we are told it did. But in any case it was not active on land, and probably, like the Auk family generally at the present day, it rarely came ashore except in the breeding season, when it followed the usual Auk custom of laying one large egg on the bare rock. This egg, for the shells of which such extravagant prices are paid, has nothing remarkable about it, being simply like the razorbill's egg enlarged to the size of a swan's; it was rough in surface and creamy in colour, with black markings of variable size and amount. Nothing exact is known about the young bird, but this could hardly have differed much except in size from other young auks, and no doubt, like them, took to the sea before it was fully fledged. Fledged young birds could be known from adults in winter plumage by having fewer of the transverse ridges on the bill, which were found in this species as in the razorbill, though in the great auk they were more numerous.

On St. Kilda, almost the only locality in the British Islands where the bird bred, it used to

arrive on the first of May, and go away about the middle of June, which certainly points to the young leaving the rocks early in life.

At sea it swam with the bill up and neck drawn in, and seldom went out of soundings ; its food was fish, and some specimens were captured by offering them fish from a boat, or even hooked on a line. But such specimens were no doubt sickly, or starving for some other reason, for a diving-bird in low condition is as badly off as a bird which hunts on the wing under similar circumstances, since it is not equal to the exertion necessary to capture the food it so much needs.

More than one specimen has been kept in captivity for some months, but none seem to have got into any menagerie, public or private, or to have lived as long as a year. It may be noted that all the Auk family have proved to be delicate in captivity, unlike the penguins.

The great auk did not, as far as is known, range north of the Arctic Circle, although ideas got about that it was a Polar bird ; in fact, it is only certainly known to have bred in St. Kilda, Orkney, the Faroes, some rocks off the coast of Iceland, Danell's Islands off South-west Greenland, and on many islands off the Newfoundland coast, especially Funk Island, its southern limit being apparently Cape Cod.

It was only really numerous on the American side of the Atlantic, and there it was worked sc unmercifully, at first for ships' victualling and

then for its feathers, that it is not surprising it became extinct. Like penguins, the great auks did not take to the sea at the first alarm —no doubt because the chief enemies of these birds are sea creatures such as the grampus—and so it was the usual practice to drive them aboard ship and kill them there, or collect them in pounds built of stones on shore. Many are known to have been killed out of sheer wantonness, and even, with horrible cruelty, burnt alive.

About 1497 this campaign against the American great auks began, and it says much for the extraordinary numbers of these birds that not till 1785 did they approach extinction ; in that year George Cartwright said that it was the custom then for men to spend whole summers on the island to kill birds for their feathers, and that this could only result in their "being diminished to almost nothing, particularly the penguins, for this is now the only island they have left to breed upon." But nothing seems to have been done, and the great auk became extinct in American waters before the last century was half over.

On the European side it lingered for a good many years on the Geirfuglasker—gare-fowl skerry, gare-fowl being a name often applied to this auk—but nature itself seemed to be against the doomed bird, and in 1830 volcanic disturbances resulted in the submergence of the Geirfuglasker. The birds, or some of them,



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then resorted to Eldey, a rock nearer the coast, where there was only one landing-place, and here the last of the great auks were deliberately captured for collections; the last two known to have lived were thus caught in 1844, so that their extinction on both sides of the Atlantic was nearly simultaneous.

Although the great auk was not more interesting scientifically than several flightless birds which still exist, such as the flightless grebe of Lake Titicaca in the Andes, and the kakapo or owl parrot of New Zealand, it may be safely said that there is none whose extinction reflects more discredit on humanity, since it could easily have been saved, for it is reckoned that upon Eldey at least sixty were killed—quite enough to have kept the species going if they were let alone—to say nothing of the iniquitous proceedings on Funk Island.

It is small consolation that the species is better represented in collections, public and private, than any other extinct animal, there being about eighty skins and seventy eggs in existence, besides skeletons, detached bones, and a few spirit specimens of the internal parts. Counterfeit skins—made up of those of razorbills and other birds—and artificial eggs have also been made, so that no museum of any pretensions has an excuse for being without some presentation of this ill-fated bird.

The moa—or rather moas, for there were a

whole family of them—of New Zealand, though not very well known to the public, will always be remembered as having created one of the greatest of zoological sensations.

In 1839, as Sir Richard Owen tells us in his *Memoirs on the Extinct Birds of New Zealand*, there was brought to him at the College of Surgeons a fragment of bone for which its owner wanted ten guineas, saying that he had got it in New Zealand from a native, who told him that it was the bone of a great eagle. Owen told him that it was not like the bone of such a bird, but only a marrow-bone, but afterwards consented to have a further look at it, and on comparing it with the skeletons of a bullock and an ostrich, found it really was part of the thigh-bone of a bird, of an unknown but very large kind, the ostrich being the biggest bird then known ever to have lived. The Museum Committee, however, would not buy the relic, and when Owen drew and described it, the Publication Committee of the Zoological Society had some hesitation in accepting the account, and ultimately took it on condition of the responsibility of the paper "resting entirely with the author," for the state of the bone suggested that it belonged to a kind of bird still living, and such a big bird was not likely to have been overlooked in New Zealand, even if it could have found a living there.

However, as the fame of this remarkable identification of a remarkable bird spread,

many more remains came to light, and ultimately it was discovered that there had been in existence, as above remarked, not one kind of moa, but several; the exact number has never been as yet determined, the estimates ranging from six to a couple of dozen.

That there were a good many is undoubted—the variations in size and shape of the remains show that—and while some of these birds were not bigger than large turkeys, others were much larger than ostriches, the biggest of all having a drumstick-bone over a yard long, and standing twelve feet high, while the ostrich is only eight, and is much less massive in build than the moas were.

Even feathers have been discovered, and these had a long aftershaft, or supplementary plume, so that they appeared double, like those of the emu, which they much resembled. In fact, the general appearance of the moas must have been more like that of the emu than of any other living bird, but they had shorter and stouter legs, with a small hind-toe on the feet, which the emu has not, and, generally speaking, no wings at all, while the emu has wings, though very small ones, not noticeable except on close inspection.

They all had short, emu-like beaks, but these differed slightly in form, being more pointed in some than in others, and in some of them the legs and feet, which were always very powerful, were so broad and short that these birds are

called elephant-footed moas. One or two of these heavy kinds were far bigger, as far as bulk and weight go, than the tall birds. The hens are believed to have been bigger than the cocks, as in the emu ; their eggs have been discovered, the shells of which were not so thick as that of the ostrich's egg, though the eggs themselves were larger.

It is supposed that these birds fed largely on the roots of the fern so abundant in New Zealand ; they certainly swallowed pebbles to aid digestion, as numbers of these have been found in association with the remains.

The existence of giant birds in New Zealand had been suggested before Owen's identification of the bone by Polack, who in his *New Zealand*, published in 1838, said he had seen large bird bones, and been told by the natives that long ago they had heard by tradition that great birds existed which had been hunted down and destroyed for food. Subsequently, collected traditions, and the discovery of bones which had been charred, have confirmed this, one of the great elephant-footed species having evidently been a frequent victim.

Of course, hunting birds like this was not child's play. The ostrich is said to kick worse than a mule, and to be able to knock a hole in corrugated zinc, and he is a weedy weakling compared to the great moas with their huge feet and thick, short shanks ; so it is not surprising to hear that the natives had to use

stratagem in attacking them, lying in ambush by their tracks and having the birds driven towards them, when they speared them, with lances cut near the point, so that this should break off and be left in the body of the bird, which was thus considerably weakened when it got out into the open, and more easily finished off.

Naturally a great deal of tradition is unreliable and difficult to date with anything like accuracy, and a very old Maori poem is said to contain the phrase, "Lost as the moa is lost," showing that the natives themselves regarded the birds as long extinct; but it is pretty generally agreed that moas were living less than half a dozen centuries ago, and remains have been found with not only skin and feathers, but mummified flesh adhering to the bones.

There is even a story that some of the biggest specimens existed down to our times; in 1842, a missionary, the Rev. W. Williams, who had procured and sent to England many bones of what he quite independently recognized as giant birds, wrote to Dr. Buckland, at Oxford, as follows, in a letter concerning them :—

"Within the last few days I obtained a piece of information worthy of notice. Happening to speak to an American about the bones, he told me that the bird is still in existence in the neighbourhood of Cloudy Bay, in Cook's Straits; he said that the natives there had mentioned

to an Englishman of a whaling party that there was a bird of extraordinary size to be seen only at night on the side of a hill near there ; and that he, with the native and a second Englishman, went to the spot ; that after waiting some time they saw the creature at some little distance, which they describe as being fourteen or sixteen feet high. One of the men proposed to go nearer and shoot, but his companion was so exceedingly terrified, or perhaps both of them, that they were satisfied with looking at him, when in a little time he took the alarm and strode up the mountain. This incident might not have been worth mentioning, had it not been for the extraordinary agreement in point of size of the bird." Mr. Williams had concluded from the remains that " the greatest height of the bird was probably not less than fourteen or sixteen feet."

Next year, Colonel W. Wakefield, in a letter written from Wellington to Mr. J. R. Gowen, said : " I have heard several stories of live moas having been seen ; one, that the enormous size (higher than our one-storied houses) frightened the person, an Englishman, who was going to shoot it ; but I don't believe anyone has seen a live one lately."

Recent writers do not seem to notice these stories, and it must be borne in mind that the large moas were always rarer, apparently, than the smaller ones, and that judging from the comparative freshness of the bones, these

smaller birds were the longest survivors, which is just what one would expect; but we must remember that a contemporary of the moa still exists for all we know—at any rate, several specimens have been captured alive, one within the last twenty years, although the bird was first described from bones found along with those of moas. This is the notornis of naturalists, the moho or takahe of the Maoris, a large blue, flightless moorhen very closely related to the beautiful porphyrios, of which several kinds are found in warm countries in the Old World, and some of which are always to be seen at the Zoo.

It is thus quite possible that some moas did survive in out-of-the-way places till recently, especially if they were nocturnal birds; the native tradition of their extinction would not necessarily prove that they were gone everywhere in the islands; an extinct creature is often soon out of mind as well as out of sight—even the dodo was suspected of being fabulous at one time, since no tradition of its existence survived in its native island.

The moas had other troubles besides human persecution to contend with; their remains have been found in numbers in certain places under conditions showing that they had perished from natural causes. Like quadrupeds, they were subject to accidents from cold, drought, and getting bogged; and even some of the existing flying birds of New Zealand have been

recorded as now and then suffering widely from failure of food—a much more serious thing for the flightless moas. Moreover, in addition to the fights which Maori tradition says they had between themselves, they were probably attacked by an extinct eagle whose bones are found along with theirs. This was a very big bird, half as large again as the golden eagle, and with stronger feet, though its wings seem to have been shorter; most likely it was the worst enemy of the young birds and of the old ones of the smaller kinds, and became extinct as its prey disappeared.

There can be no doubt, however, that man himself, as native tradition says, was the chief exterminator of the moas, although an ingenious theory has been suggested to the effect that these birds were more or less domesticated, and that what we think were wild species were really often only different tame breeds. It is true that the existence of several different kinds of these birds in a small country like New Zealand has always been a puzzle, but there is exactly the same trouble about the existing New Zealand cormorants, where the same explanation will hardly apply. Out of forty known kinds of cormorants New Zealand has no less than sixteen, one of them being our own common cormorant; while all over Europe this, the shag, and the dwarf cormorant of Eastern Europe are the only kinds known, and there is nothing about the conditions of life for these

birds in New Zealand to explain such a collection of different kinds there.

As before remarked, the majority of the other historically extinct birds are not such as would excite general notice anywhere, and hence can hardly claim a place in a work of the present scope, but an exception may be made in favour of the celebrated passenger pigeon of North America, whose case is remarkable in several respects—if indeed it is really extinct, as seems all too probable now.

In itself, except for its long, pointed, parrakeet-like tail, this bird was a very ordinary-looking pigeon, its size being a little less than that of the common tame bird, and its colour the common pigeon-blue in the cock, and drab in the hen, slightly chequered with black on the wings. Its general habits also called for no special remark; it fed on the usual food of wild pigeons, herbage, seeds, and grubs and worms, and was especially fond of beech-mast, and a sore pest to the farmers' crops. It differed from most pigeons, however, in laying only one egg instead of the usual two, and from nearly all of them in always keeping in large flocks, in the breeding-season as well as out of it.

Hence, when these birds made up their mind to nest anywhere the whole neighbourhood knew about it, and all enemies—human, furred, and feathered—gathered to the spoil, and worked havoc on the defenceless multitudes.

In fact, it was said that when there was a pigeon-roost in any neighbourhood, the inhabitants for weeks ate, talked, and thought of nothing but pigeons; the term stool-pigeon, applied to the unfortunate blinded bird which was perched on a movable stick and made to flutter to attract the flocks into the clap-nets, became a proverbial expression, like "decoy-duck" or "stalking-horse" among ourselves, and a regular profession of pigeon-netting sprang up.

A good many birds were sent to Europe alive, and many were even turned out in England after the thirties; this, Howard Saunders thinks, may account for the appearance of the five specimens which have been shot at different times in Britain, one of which, at any rate, showed signs of having been in captivity. The Zoological Society has possessed nine specimens at different times, the last of these having been those presented by Mr. F. J. Thompson in 1883, when the species, as will be seen presently, was already on the decline, and approaching the extinction which seems to have overtaken it. The best idea of the numbers of the passenger pigeon in its palmy days is given in the following quotation from Wilson's *American Ornithology*, written a century ago:—

"The roosting-places are always in the woods, and sometimes occupy a large extent of forest. When they have frequented one of those places for some time the appearance it

exhibits is surprising. The ground is covered to the depth of several inches with their dung; all the tender grass and underwood destroyed; the surface strewn with large limbs of trees, broken down by the weight of the birds collecting one above another; and the trees themselves, for thousands of acres, killed as completely as if girdled with an axe. The marks of their desolation remain for many years on the spot; and numerous places could be pointed out, where, for several years after, scarcely a single vegetable made its appearance. When these roosts are first discovered, the inhabitants, from considerable distances, visit them in the night, with guns, clubs, long poles, pots of sulphur, and various other engines of destruction. In a few hours they fill many sacks and load horses with them. By the Indians, a pigeon-roost or breeding-place is considered an important source of national profit and dependence for that season, and all their active ingenuity is exercised on the occasion. The breeding-place differs from the former in its greater extent. In the western countries, viz. the States of Ohio, Kentucky, and Indiana, these are generally in backwoods, and often extend in nearly a straight line across the country for a great way. Not far from Shelbyville, in the State of Kentucky, about five years ago, there was one of these breeding-places, which stretched through the woods in nearly a north and south direction,

and was said to be upwards of forty miles in extent! In this tract almost every tree was furnished with nests wherever the branches could accommodate them. The pigeons made their first appearance there about the 10th of April, and left it altogether with their young before the 25th of May. As soon as the young were fully grown, and before they left the nests, numerous parties of the inhabitants, from all parts of the adjacent country, came with waggons, axes, beds, cooking utensils, many of them accompanied by the greater part of their families, and encamped for several days at this immense nursery. Several of them informed me that the noise was so great as to terrify their horses, and that it was difficult for one person to hear another speak without bawling in his ear. The ground was strewed with broken limbs of trees, eggs, and young squab pigeons, which had been precipitated from above, and on which herds of hogs were fattening. Hawks, buzzards, and eagles were sailing about in great numbers, and seizing the squabs from the nests at pleasure; while, from twenty feet upwards to the top of the trees, the view through the woods presented a perpetual tumult of crowding and fluttering multitudes of pigeons, their wings roaring like thunder, mingled with the frequent crash of falling timber; for now the axe-men were at work, cutting down those trees that seemed to be the most crowded with nests, and contrived to fell them in such a

manner, that, in their descent, they might bring down several others, by which means, the falling of one large tree sometimes produced two hundred squabs, little inferior in size to the old ones, and almost one heap of fat. On some single trees, upwards of a hundred nests were found, each containing one squab only, a circumstance, in the history of this bird, not generally known to naturalists. It was dangerous to walk under these flying and fluttering millions, from the frequent fall of large branches, broken down by the weight of the multitudes above, and which in their descent often destroyed numbers of the birds themselves; while the clothes of those engaged in traversing the woods were completely covered with the excrements of the pigeons. These circumstances were related to me by many of the most respectable part of the community in that quarter; and were confirmed, in part, by what I myself witnessed. I passed for several miles through this same breeding-place, where every tree was spotted with nests, the remains of those above described. In many instances I counted upwards of ninety nests on a single tree, but the pigeons had abandoned this place for another, sixty or eighty miles off towards Green River, where they were said at that time to be equally numerous. From the great numbers that were continually passing over our head to or from that quarter, I had no doubt of the truth of this

statement. The mast had been chiefly consumed in Kentucky; and the pigeons, every morning, a little before sunrise, set out for the Indiana territory, the nearest part of which was about sixty miles distant. Many of these returned before ten o'clock, and the great body generally appeared on their return a little after noon. I had left the public road to visit the remains of the breeding-place near Shelbyville, and was traversing the woods with my gun, on my way to Frankfort, when, about one o'clock, the pigeons which I had observed flying the greater part of the morning northerly, began to return, in such immense numbers as I had never before witnessed. Coming to an opening by the side of a creek, called the Benson, where I had a more uninterrupted view, I was astonished at their appearance. They were flying with great steadiness and rapidity, at a height beyond gunshot, several strata deep, and so close together, that, could shot have reached them, one discharge could not have failed of bringing down several individuals. From right to left, as far as the eye could reach, the breadth of this vast procession extended, seeming everywhere equally crowded. Curious to determine how long this appearance would continue, I took out my watch to note the time, and sat down to observe them. It was then half-past one; I sat for more than an hour, but instead of a diminution of this prodigious procession, it seemed rather to in-

crease, both in numbers and rapidity; and anxious to reach Frankfort before night, I rose and went on. About four o'clock in the afternoon I crossed Kentucky River, at the town of Frankfort, at which time the living torrent above my head seemed as numerous and extensive as ever. Long after this, I observed them in large bodies, that continued to pass for six or eight minutes, and these again were followed by other detached bodies, all moving in the same south-east direction, till after six o'clock in the evening. The great breadth of front which this mighty multitude preserved would seem to indicate a corresponding breadth of their breeding-place, which, by several gentlemen who had lately passed through part of it, was stated to me at several miles."

It would at first sight seem impossible for such multitudes of pigeons to be completely exterminated, especially when we consider that our wood-pigeon, which comes nearest among European birds to the passenger pigeon in habits, is so far from suffering from the inroads of man that it is the farmer's worst enemy among birds nowadays. As, however, the American bird had the same sort of enemies to contend with as other pigeons, and, laying only one instead of two eggs at a sitting, could only increase half as fast as most of them, it would seem as if the great hordes of passenger pigeons were capital, so to speak, which had

been accumulating for ages in the forests, as the bisons did on the plains.

Be that as it may, by the time the last century was three-parts over the pigeons were showing marked signs of diminution, for in the older civilized parts of the United States, such as New England, there were no more great roosts, and the birds had the ordinary habits of wild pigeons, breeding in single pairs; but even as late as 1892 they were exported east from the Indian territory by the barrelful.

This, however, was the last of their abundance, and so rapidly did their decline proceed that when the present century opened it was believed there were hardly any wild birds left. A few still existed in aviaries, but the strain was much "inbred," and all hope of saving the species by this remnant was lost—they died off till only one living specimen, a female in the Cincinnati Zoo, bred in captivity, was in existence until recent years. There are plenty of them in museums, and a good pair may be seen in the Bird Gallery, at the South Kensington Museum.

It would hardly seem that man's persecution alone is responsible for the whole tragedy, though, apart from the numbers killed by man, his driving the survivors into northern parts of their range, where they could not bring up their young successfully, had no doubt a great deal to do with it. Moreover, disasters during migration, when numbers were driven

by weather into the great lakes and drowned, are cited as a great cause of mortality, and it has been suggested that disease may have had something to do with it. This, although no proof has been advanced, seems very likely, as our wood-pigeon sometimes suffers badly in this way, the domestic pigeon appearing to be the source of infection with the throat disease known to fanciers as canker. But, whatever the cause or causes, it seems we have seen the last of this valuable, beautiful, and interesting bird.

The age of sensational reptiles having gone by before man appeared, there has been nothing very remarkable in the reptilian class for him to exterminate; yet, as usual, an evil fate has fallen on the harmless and useful kinds, and most of the race of giant tortoises has vanished from the earth. Fossil remains show that large land-tortoises were once widely distributed on the continents, but in man's historical knowledge none have existed there; all that we know of were confined to small and remote islands, the Mascarene Islands and Aldabra group in the Indian Ocean, and the Galapagos Islands almost on the Equator, in the Pacific.

It is a curious fact that the tortoises from such distant localities were much alike in type, and also that there were no small tortoises on these islands; that there should generally have been only one large kind on each

is not unnatural. These giant land-tortoises, whose shells measure from two to four feet in length, had the habits of land-tortoises in general, so far as we know them; that is to say, they were vegetarian feeders and slow movers. Nor did they differ much from ordinary tortoises in shape, though the species inhabiting the Galapagos group were remarkable for the length of their necks, which they often held erect high above the shell. The differences between the species are not for the most part of any general interest, so it will be sufficient here to mention briefly the fate of those which are known to be entirely extinct.

The tortoises of the Mascarene Islands—Mauritius, Rodriguez, and Réunion—were, of course, compatriots of the giant flightless pigeons, the dodo and solitaire, and other flightless birds of those islands, and not unnaturally shared their fate. These large tortoises, it was universally agreed, were very good for food, and they were most convenient subjects for ships' victualling. It was not even necessary to kill them and salt them down; like reptiles generally, they could live long without food, and were simply taken on board alive and kept till they were required for slaughter.

The great land-tortoise of Mauritius is of especial interest as being the first giant kind ever scientifically described. Perrault, in 1676, called it "La Tortue des Indes," and stated it came from Coromandel. Dr. Günther, in his

valuable memoir on these big tortoises, published by the British Museum, points out that this was, of course, a mistake, no such tortoises being known in India, but that it was very likely that a ship coming from India would touch at Mauritius. The large tortoises there, which were not so big as some of those found elsewhere, not exceeding three feet in length of shell, were a great stand-by for many years. In 1740, Grant, in his *History of Mauritius*, speaks of them as used, along with sea-turtles, not only for the food of the inhabitants, but for barter with passing ships which touched on their way to India.

In Rodriguez they were still commoner, for Leguat, our authority on the solitaire, says that they could be seen there by two or three thousands in a flock, "so that you may go above a hundred paces on their backs." He also mentions a custom they had of setting sentinels on the outskirts of the flock, who watched with head erect, though it is difficult to see what enemies these large tortoises could have had in such a place, or what they could have done to escape them if forewarned, other than follow the usual tortoise plan of drawing their heads and feet within the shell. In 1761, Mauritius was drawing on Rodriguez for supplies of these tortoises, for, according to Admiral Kempenfelt, thousands of them were being brought to the Mauritius hospital by small craft specially engaged in this work.

In addition to human inroads, the tortoises appear to have been persecuted by dogs, which devoured the young, while many must have perished when the bush was fired to make clearings. At any rate, early in the nineteenth century the tortoises of Mauritius and Rodriguez were extinct, and those of Réunion seem to have gone even before; indeed, their existence is only known by the accounts of old writers, for no remains have been obtained on this particular island.

The Aldabra tortoises have been protected for many years; and though those on the Galapagos have been hunted down relentlessly by dogs which have run wild as well as by man, so that an expedition which visited the islands in 1901 believed that they had brought away all there were, it is probable, according to Mr. Ditmars, of the New York Zoological Park, that some may yet remain; and in any case there are some living in various zoological gardens, so that not all the races of this group of islands have disappeared completely, though, of course, as far as chances of survival go, they may as well be in a museum as in zoological gardens, except in the Tropics, where they could live in the open and breed.

As a matter of fact, a good many have been carried about and kept in different localities in the Tropics far from their native homes; a celebrated individual was the Colombo tortoise, which lived in the capital of Ceylon under

the Dutch Government before it came under our rule. Tortoises generally are long-lived, and it is estimated that one of these monsters exceeding four feet over the curve of the shell may be four hundred years old. This longevity, as Dr. Günther points out, explains the great numbers of these reptiles which used to inhabit their native islands, since it would mean several generations living side by side.

Indeed, the natives of the Galapagos told Darwin, who gave a full account in his *Voyage of the "Beagle"* of the habits of the great tortoises, which were then numerous, that the large specimens never seemed to die except by some accident, such as falling over a precipice. Perhaps even this need not have been accidental; land-tortoises are the most intelligent of reptiles, in spite of their stupid appearance, and as the males fight by butting each other, it is quite possible that an inquest on the body of a precipitated giant might result in a verdict of wilful murder against another tortoise. At any rate, although these big tortoises have the reputation of being perfectly harmless, a keeper at our Zoological Gardens once told me that one specimen shown there would try to crush his leg with its shell against the wall of its pen if it got the chance; but all such observations on the mental and moral peculiarities of the big tortoises will apparently have to be made soon to be of any use.

IV

ANIMAL FOES AND RIVALS OF MAN

Of all the wild beasts with which man has had to contend the lion is the most notable, and his great strength and noble appearance have always compelled our admiration, in spite of the damage and danger due to his ravages. Moreover, his original range included those countries which were the seats of the oldest civilization, so that the conflict between the king of beasts and mankind was inevitable, at any rate as soon as live-stock began to be kept. In the Bible there are more than a hundred references to him, and everyone is familiar with the brave shepherd-boy David's encounter with the beast and with Samson's strange find of a swarm of bees in the dried-up carcase of one he had killed. The lion in Palestine was evidently often a man-eater ; not only do we hear of more than one person killed by the beast, and of the ravaging of Samaria by lions after the desolating of Israel by the Assyrians, but the danger of "a lion in the way" was the stock excuse of the sluggard.

Lions appear to have been kept in preserves by the Assyrian kings for the purpose of hunting,



THE LION.

as is shown by the Assyrian sculptures, one of which even depicts a lion being let out of a cage. In Palestine itself they lingered down to the time of the Crusaders, and were found about Samaria in the twelfth century; while when Canon Tristram wrote, about half a century ago, they were still common between the Lower Tigris and Euphrates, and occasionally crossed the latter river, though it generally marked the limit of their range to the westward in Asia.

That the Jews of the Old Testament period were well acquainted with the lion's peculiarities is abundantly manifest; the descriptions of his habits in the various texts referring to him are marvellously vivid. Take for example that in the second chapter of the book of the prophet Nahum: "The lion did tear in pieces enough for his whelps, and strangled for his lionesses, and filled his holes with prey, and his dens with ravin." How true to life is this ancient description of the lion as a family provider may be judged by comparing the Hon. W. H. Drummond's account, in the *The Large Game and Natural History of South and South-East Africa*. From a tree this observer watched a lion which had just killed a zebra, "but instead of proceeding to eat it, he got up and roared vigorously until there was an answer, and in a few minutes a lioness, accompanied by four whelps, came trotting up from the same direction as the zebra, which no doubt she had been to drive towards her husband. They formed a fine picture

as they all stood round the carcase, the whelps tearing it and biting it, but unable to get through the tough skin. Then the lion lay down, and the lioness, driving her offspring before her, did the same four or five yards off, upon which he got up, and, commencing to eat, had soon finished a hind-leg, retiring a few yards on one side as soon as he had done so. The lioness came up next and tore the carcase to shreds, bolting huge mouthfuls, but not objecting to the whelps eating as much as they could find. There was a good deal of snarling and quarrelling among these young lions, and occasionally a stand-up fight for a minute, but their mother did not take any notice of them, except to give them a smart blow with her paw if they got in her way." Mr. Drummond nearly succeeded in catching one of these youngsters, which, probably full-fed, had aimlessly wandered up to his tree ; but it scratched and bit so that he was glad to let it go, and take to his tree again to avoid the mother, who, after bumping into the tree in her furious haste and roaring savagely at him, " flew at her offspring, and drove it, yelling at her rough treatment, towards the others." Then " the whole lion family walked quietly away, the lioness leading, and the lion, often turning his head to see that they were not followed, bringing up the rear."

An account given by Oliver St. John in Blanford's *Zoology of Persia,* of his encounter with a lion in that country, is interesting, as one

does not often hear nowadays of lions in Western Asia. In March, 1867, he was travelling on horseback, and entered the oak forest south of Dashtiarjan at sunset, unarmed but for a small revolver. He had indeed been in Persia for three years, and had sought for lions, but found none so far, when now a lion was to find him, for as he was ascending a hill after crossing a rivulet where he had actually often seen their tracks, he found a lioness in his way, which glided out from the trees thirty yards ahead.

He tried to frighten her off by shouting and cracking his hunting-whip, but she charged down and sprang at the horse's throat, but missed her aim. St. John tried to gallop off, not liking to risk merely irritating the brute by a shot from his feeble weapon; but the terrified horse would not move, until the lioness rushed round and seized his hind-quarters with her fore-paws and teeth, on which he naturally reared and plunged violently, upsetting his rider, who had slipped off, and the lioness as well.

On recovering himself, St. John tried to frighten the lioness, which was still glaring at the escaped horse, by firing over her head. But this only started off the horse, which had not gone far, when the lioness pursued and seized him behind again, and both beasts disappeared into the forest.

St. John, after some natural hesitation determined very pluckily to follow up his horse, and half a mile on found him safe but wounded,

and drove him on out of the forest into the plain, as he could not be approached owing to his state of terror. He then reached a neighbouring village, and, after a very flea-bitten night in a hut, captured his injured mount next morning ; the horse recovered in a week, though he had one wound two inches deep.

Returning to ancient authorities on the lion, we come to the poems of Homer, which were to the Greeks much what the Bible is with us ; and we find that with Homer the lion, wherever observed, was a familiar animal; although not mentioned as a man-eater, he is well known as a terrible enemy to cattle and sheep, and is dreaded by the hunters when they meet him unawares. Many beautiful passages describe his ferocity and power, to which the prowess of the heroes in the great war the poet describes are compared. In those I quote I use Lord Derby's fine translation :—

"Slow as moves a lion from the fold,
Which dogs and youths with ceaseless toil hath worn,
Who all night long have kept their watch, to guard
From his assault the choicest of the herd ;
He, hunger-pinched, hath oft the attempt renewed,
But nought prevailed ; by spears on every side,
And jav'lins met, wielded by stalwart hands,
And blazing torches, which his courage daunt ;
Till with the morn he sullenly withdraws."

Then, the lion-hunt, almost as described by Colonel Roosevelt :—

"Fierce as a rav'ning lion, whom to slay
Pour forth the stalwart youths, th' united strength

Of the rous'd village ; he unheeding moves
At first ; but wounded by a jav'lin thrown
By some bold youth, he turns, with gaping jaws,
And frothing fangs, collecting for the spring,
His breast too narrow for his mighty heart ;
And with his tail he lashes both his flanks
And sides, as though to rouse his utmost rage ;
Then on, in pride of strength, with glaring eyes
He dashes, if some hunter he may slay,
Or in the foremost rank himself be slain."

A successful attack by the lion on the herd is thus described :—

" As a lion, in the mountains bred,
In pride of strength, amid the pasturing herd,
Seizes a heifer in his powerful jaws,
The choicest, and her neck first broken, rends,
And, on her entrails gorging, laps the blood ;
Though with loud clamour dogs and herdsmen round
Assail him from afar, yet ventures none
To meet his rage, for fear is on them all."

Somewhat similarly described is the attack by two lions on a herd-bull, which is overpowered in spite of efforts to save him ; nor are the relations of the lion with other wild animals and with his own kind forgotten—two famished lions are described as fighting over the carcase of a stag ; a lion fights with a boar for the possession of a spring, and bears him down ; and another takes from the jackals the wounded prey these cowardly brutes have worried to death by numbers :—

" As hungry jackals on the mountain side
Around a stag, that from an archer's hand
Hath taken hurt, yet while his blood was warm
And limbs yet serv'd, has baffled his pursuit ;
But when the fatal shaft has drain'd his strength,

Thirsting for blood beneath the forest shade,
The jackals seize their victim ; then if chance
A hungry lion pass, the jackals shrink
In terror back while he devours the prey."

So familiar was the lion, in fact, that in another passage Homer first uses the simile above given of the lion driven unwillingly from the cattle kraal, and directly afterwards compares his hero of the immediate moment to a stubborn old donkey well whacked by little boys who try to drive him out of a cornfield, both comparisons apparently conveying the same familiar idea to his hearers, while the incongruity of the last with a dignified character does not seem to have struck the poet—all he knew was that his hero was a " stayer," be he like lion or donkey !

Homer's lions were no doubt mostly Asiatic, as the Iliad, in which the above and most other lion references occur, treats of the war of Troy ; but they must have been familiar to some of the Greeks in Europe at this time, for there is plenty of evidence that the lion was once a European animal.

Every lover of the beautiful Greek stories knows the tale of Hercules' fight with the Nemean lion, and how the hero always used the lion's skin afterwards as his cloak.

It may be said that Hercules is a solar myth, or something of that sort, and does not count in a scientific connection ; but personally I believe that all these old tales are essentially historical, and even if they were not there is excellent

evidence of the existence of the lion in Europe in times about the events of which there is no such doubt.

When Xerxes, in his great invasion of Greece, had got into Thrace, Herodotus tells us "he marched through the lands of Pæonia and Creston, towards the river Chidorus, which rises in the Crestonian country and flows through the lands of Mygdon to discharge itself into the marsh above the Axius river. And as he marched through this district lions attacked his camels which bore the provisions. For the lions deserted their usual haunts, and came by night, attacking nothing but the camels—neither any other beast of burden nor human being. And I wonder what was the reason why the lions thus left everything else alone and set upon the camels, a kind of beast they had never seen or had experience of. There are, indeed, throughout this country numbers of lions, and wild oxen, whose immense horns are brought into Greece. And the limits of the lions' range are the rivers Nestus, which flows through Abdera, and the Achelous, which flows through Acarnania. For nowhere in the whole of the fore part of Europe eastward of the Nestus could you see a lion, nor in the rest of the continent west of the Achelous; but their haunt is in the tract lying between these two rivers."

Euripides also in his Alcestis speaks of Greek lions, though he is writing of the heroic days of

Hercules when he describes lions as among the beasts charmed by the god Apollo :—

> "And downward stalked from Othrys' wood
> The lion troop, fell beasts of blood."

The reference, although of no particular use as a date, is interesting as showing the Greeks knew that the lion, unlike other felines, sometimes associates in troops; more than twenty have been seen together in East Africa within last year.

This also makes more credible the following statement of Ælian, who, in the twenty-seventh chapter of the seventeenth book of the *History of Animals* says: "There used to be a nation in the country of the Libyans, who were called shepherds (*Nomæoi*), who were in possession of a favoured district and one well off for pasturage, and were prosperous generally; but they ultimately disappeared completely, on account of an invasion by numbers of lions of large size and unconquerable audacity, who destroyed them root and branch until the whole nation was exterminated; for when lions make an invasion in force nothing can be done to combat them."

Aristotle mentions the lions in the Thracian district specified by Herodotus, so that, unless he simply took his facts from the earlier writer, they lasted in Europe down to the days of Alexander the Great, whose tutor Aristotle was.

The following story, forming the twenty-first chapter of the third book of Ælian's zoological

work, is, as it refers to European lions, worth quoting, though rather hard to believe!

"Eudemus says, that on Mount Pangæus in Thrace a she-bear attacked the lair of a lion, finding it undefended, and killed the cubs, which were still too small to defend themselves. But when the father and mother came home from hunting and saw the slaughter of their children, they were naturally grieved, and rushed to attack the bear; but she in her fear climbed up a tree with all the speed she could, and sat down, trying to escape their attack. But as they had come there with the express purpose of revenging themselves on their enemy, the lioness thereupon did not leave her post, but sat down at the foot of the tree, glaring up with bloodshot eyes, while the lion, out of his wits with grief, like a man, went wandering over the mountain, till he came upon a woodcutter. The man was frightened and dropped his axe, but the lion fawned on him and reared up and made as much of him as he could, and licked his face with his tongue. So the man began to take a little courage, whereupon the lion curled his tail about him and led him away, but would not let him leave his axe, but made signs to him with his paw to pick it up; and as the man did not understand, he took it up in his mouth and held it out to him; and the man followed the lion, who brought him to the tree. The lioness, seeing him, came and fawned on

him herself, and looked to him for compassion, and glared up at the bear. So the man came to the conclusion that she had done some harm to the lions, and set to work with all his might to cut down the tree; it fell, and the bear was flung out, and the beasts tore her to pieces; then the lion took back the man safe and sound to the place where he had first met him, and left him to his original occupation of cutting wood."

The fact is, the ancients were evidently so much impressed with the disposition of the lion, which is certainly a more amiable animal than most wild beasts, when tamed, that they formed very idealized impressions of his character; for instance, Ælian devotes the first chapter of the third book of his *History of Animals* to an account of the extreme amiability of the lions of Mauretania.

"The lion," he says, "is the Moor's travelling companion, and drinks from the same spring as he. I hear, also, that the lions go to the houses of the Moors, when they have had bad luck in hunting and are hard pressed by hunger; and if the master of the house is at home, he sends the lion about his business and chases him away by force; but if he is away, and his wife is at home alone, she checks the beast's advances by suitable remonstrances, and keeps him in his place, admonishing him to restrain himself, and not let his hunger drive him frantic. Now, the

lion understands the Moorish language, and the Moors say that this is the substance of the woman's reproaches to the beast: 'Are you not ashamed, you, the lion, the king of the beasts, to come to my hut, and beg food from a woman, and look to a woman for the pity and sympathy you need, like a cripple; you, who ought to rove the mountains and fall upon stags and hartebeests, and other prey that is fit food for lions; but you like better to beg, like a miserable little cur.' Thus does the lady of the house rate him; and he, as if cut to the heart, and thoroughly ashamed of himself, sneaks off quietly and with downcast countenance, quite subdued by the arguments of reason. Now, when horses and dogs understand and fear human abuse because of their close association with us, I should not be surprised that the Moors, who are on terms of friendly intimacy with lions, and brought up with them, should be understood by the animals. For the Moors say that they treat the lions' cubs in the same way as their own children, in board and bed and house; and from this it is not incredible or absurd that the beasts should understand the language I have spoken of above."

Far removed as is the modern Red Indian from the ancient Mauretanian in every way, it is interesting to find him with the same idea about the susceptibility of animals to reason-

able remonstrance, as evinced by the following anecdote told by Richardson :—

" Reskarrah, an aged Indian, was seated at the door of his tent, pitched by a small stream not far from Fort Enterprise, when a large bear came to the opposite bank, and remained for some time surveying him. Reskarrah considered himself in great danger ; and having no one to assist him but his aged wife, made a speech to the following effect : ' O bear ! I never did you any harm ; I have always had the highest respect for you and your relations, and never killed any of them except through necessity. Go away, good bear, and let me alone, and I promise not to molest you.' The bear walked off ; and the old man, fancying that he owed his safety to his eloquence, favoured us, on his arrival at the fort, with his speech at length."

The most celebrated of all these tales about the friendly relations of lions and men is the story of Androcles, who was a young slave of a Roman senator, and, to escape punishment for some offence or other, had run away, got to Africa, and betaken himself to the desert.

Here, when trying to escape from the burning heat of the sun, he went into a cave, which happened to be the den of a lion. Presently the lion came home from hunting, in a state of great affliction, because a sharp

splinter had run through his paw; when he saw Androcles he showed no ferocity, but was conciliating in his manner, held out his paw, and as plainly as he could asked for the splinter to be extracted. At first Androcles had given himself up for lost, but after he saw how gentle the beast was, and understood how his foot was hurting him, he pulled out the splinter that was the cause of the trouble, and relieved the animal. The lion, delighted with this kind service, treated him as his friend and guest, and shared with him the game he brought home, each dealing with the meat after his own fashion, for Androcles cooked his share, while the lion naturally preferred to have his rations raw.

In this way Androcles lived with the lion for three years; ultimately, however, he left his feline friend and tempted fortune again, for the unromantic reason, so Ælian says, that as he had not washed or properly looked after his person at all he was troubled by intolerable itching. This, no doubt, would be simply the result of living too exclusively on meat, and that in a hot climate, so the fact is reasonable enough, though the reason Ælian gives may not be sufficient, for washing is often neglected without any very terrible results by natives, even in hot climates.

Presently, however, he was captured, detected as a runaway slave, and sent back in chains to Rome. Escape for a slave in those days was far

more difficult than it was for the much-pitied negroes of the United States half a century ago, who had only to get over the British border. A Roman slave could do nothing but flee to those remote lands where Rome did not rule, whose inhabitants would probably be no kinder than his master; or, like Androcles, take to the wilds.

His master accused him of the crime from the punishment of which he had fled, and he was condemned to be killed by wild beasts in the arena.

It so happened that his friend the lion had had the same bad luck as himself, and by chance had been sent to the capital to help to make the proverbial Roman holiday. So it came to pass that the former messmates met again on the sand of the arena; Androcles, whose wits were probably confused by terror, did not recognize the lion at first, but the beast, whose scent no doubt came to his aid, knew him immediately, and fawningly threw himself at his feet. Androcles then recognized his old host, and gladly embraced him—the only friend he had in the world.

The impression this scene made on the spectators was simply that Androcles must be a wizard; so a leopard was loosed on him as well as the lion; this beast was ready enough to attack him, but the lion, remembering his ties to his benefactor and guest, soon stopped this by tearing the leopard to pieces.

This time the hardened onlookers were at last impressed seriously, and the giver of the show made inquiries of Androcles and learnt from him the whole of the circumstances. The report naturally went round the audience, and when the facts were generally known, there was a cry for the release of both man and beast. They appear afterwards to have made a living by going about, Androcles leading the lion and telling the story.

This leading of tame lions was quite a common custom in classical and mediæval times, and went on quite recently in Persia, for St. John, in the work already quoted, says: "The lútis or mountebanks of Persia are often accompanied by a captive lion, trained to eat a joint of mutton off the chest of a boy, who throws himself down on his back. It is not a pleasant exhibition, the child being generally much alarmed. I once asked a Shiraz lúti which took the most thrashing to learn his part, the lion or the boy; but a grin was the only answer vouchsafed."

To such a caricature have the ghastly exhibitions of men massacred by lions in the Roman arena descended: the numbers of these beasts which could be procured in the days of Roman dominion may be judged of by the statement of Pliny, who says that Sulla "gave a fight of one hundred lions with manes." After him, Pompey the Great exhibited six hundred lions in the Circus, three hundred and

fifteen of which had manes; Cæsar, the Dictator, exhibited four hundred.

Of course, the Romans had all North Africa to draw upon for their lions, and the lion, though now very rare there, is not even yet extinct, nor is it in South Africa, except in the region south of the Orange River. In India the lion does not appear ever to have ranged beyond the central portion; but it has disappeared from most of its territory in that country, although as late as 1864 one was killed only twenty-five miles west of Allahabad, and the last survivors of the race, now preserved, still inhabit the Gir Forest of Kattywar.

Over most of Africa the lion still holds his ground, and is a great deal more common than is appreciated by stock-owners; in Portuguese East Africa, only last year, twenty pounds was the reward offered for killing a lion.

Moreover, the reputation of the lion as a terrible foe to man has been completely confirmed very recently in East Africa, and a most thrilling account of the doings of a couple of man-eaters has been given by Lieut.-Colonel J. H. Patterson, who killed both of them, in his book *The Man-eaters of Tsavo*, from which I take the following details.

These beasts made a speciality of preying upon the Indian coolies who had been brought over to work on the Uganda railway, then in process of construction, and so terrible were their ravages that "in December, 1898," says

the colonel, "they actually succeeded in bringing the railway works to a complete standstill for three weeks."

They improved in skill with practice, and became ultimately absolutely reckless in their daring attempts to obtain their human food. In fact, when Colonel Patterson had at length succeeded in shooting them it was found that the hides of both were somewhat disfigured by scratches scored on them by the thorns of which the bomas, or enclosures, in which the poor, terrified coolies entrenched themselves, were made. One poor wretch was even dragged into the bushes and left sticking there, so terribly mangled that when he was rescued he died before he could be got to hospital.

It would hardly be fair to the author of the book, whose heroism in shooting these terrible beasts was, one is glad to hear, fully appreciated by the poor coolies who were being made the food of devils, as they called their destroyers, to go more fully into the details of these tragedies; the work is one which everyone interested in the relations of man and beast ought to read for themselves; but it might be mentioned that the human "bag" of these two lions—both males and without manes, though of full size—amounted to "no less than twenty-eight Indian coolies, in addition to scores of unfortunate African natives of whom no official record was kept." Although some Europeans had very narrow escapes from these

lions, no white man was actually killed by them, but the tragic death of Mr. Ryall, who was taken out of a shunted railway-carriage in which he was sleeping with two companions, by another man-eater in the same part of Africa, is a tragedy that merits a passing mention.

It was in East Africa, only a few years before these occurrences—in 1892, in fact—that I came as near meeting wild lions myself as I ever want to do. In those days Mombasa itself, ancient port though it is, was little touched by European civilization as yet; on Mombasa Island itself and English Point on the mainland across the harbour, there were only a score or so of Europeans altogether.

One day there was an invasion of lions at English Point, which resulted in the death of a cow; two sportsmen endeavoured to retaliate by "sitting up" for him in a tree, but with no luck for the time, at all events; as a dinner-party was in progress about twenty yards off "there was a sound of revelry by night," I expect, which may have warned his feline majesty. I had been staying at a bungalow on English Point only a few days before, and had thought nothing of going about outside it at night, though one had to be on the look-out for puff-adders, and it was usual to carry a lantern.

The natives reasonably enough objected to the neighbourhood of lions, and left for the island, where I was then staying; but I

distinctly remember that there was a rumour that a lion or two had swum across the harbour —not at all an unreasonable feat, for lions swim well and fairly readily, and the distance was not great—to investigate the island. I happened to be going up from Mombasa town that night to dine at Kilindini, a small settlement at the opposite end of the island, which is only about two miles long. The mode of transit then was, and still is, I believe, by a trolly propelled by niggers, on a little line of rails, and it struck me that one would be unpleasantly near any lion which might be inclined to try man-eating. However, as our justly popular Bishop, Dr. Tucker, was one of the party, I consoled myself with the reflection that I had never heard of a lion eating a bishop, and as a matter of fact no lion put in an appearance ; but I may mention that even on this small island there were hyænas, for I often heard them ; and I have seen monkeys by day and the large white-tailed mongoose, whose tail was curiously conspicuous, at night, so that we had a fair share of wild beasts of a small kind.

The tiger has never been so familiar as the lion, and the ancients did not know much about it, and got hold of some very exaggerated ideas on the subject of its habits and capacities. Arrian, writing on India in the third century B.C., says : "The Indians think the tiger a great deal stronger than the elephant. Nearchus

says he saw the skin of a tiger, but did not see the beast itself, and that the Indians assert the tiger to be as big as the biggest horse; whilst in swiftness and strength there is no creature to be compared to him. And when he engages the elephant he springs on its head, and easily throttles it. Moreover, the creatures which we have seen and call tigers are only jackals which are dappled, and of a kind bigger than ordinary jackals." Yule and Burnell, from whose encyclopædic work *Hobson Jobson* I take this and other tiger quotations, suggest that the "jackal" is a hyæna. The word translated "dappled" may just as well mean striped, for it is applied to anything variegated, so that the striped hyæna is probably the kind meant, and this was a fairly well-known animal to the ancients.

Passing off a hyæna as a tiger sounds very like a showman's trick, but it would be interesting to know what sort of beast did duty for the frightful martichora, which Calpurnius, who lived in the time of Nero, says he actually saw in the arena, along with a mixed collection, which shows how very enterprising the Romans were in the accumulating of menagerie specimens for the brutal purpose of butchery—or of butchering each other or human beings. For Calpurnius mentions white hares, which would have come from the Alps, oxen with manes and others with humps—the bison of Germany and the zebu of India—and horned boars, which

could only be the babirusa, a beast never known to have occurred farther west than Celebes, though the ancients said it came from "India," as no doubt it did by way of trade. Now, he does not go into details about the mantichora, and yet it must have been worth looking at if it was at all like the account given.

Ælian thus describes it in the twenty-first chapter of his fourth book on the *History of Animals:* "In the Indians' country there is an animal of prodigious strength, larger than the largest lion, with its skin as red as cinnabar, and hairy like a dog's, which is called in the Indian language martichoras; its face resembles that of a human being, not a beast's; its teeth, in both the upper and lower jaws, are set in three rows, very sharp at the point, and larger than dogs' teeth; the ears are like human ears in shape, but larger and hairier; and the eyes are blue, and these also are human in appearance; but the feet and claws seem to me like those of a lion; at the end of its tail it has a scorpion's sting, which may be over a cubit long, and the rest of its tail is set on either side with spines; the tip of the tail inflicts a wound which is fatal, and that speedily. And if the beast is hunted by anyone, it lets fly the spines at the side of the tail like darts, and can strike at a long distance; and when it lets fly its spines in front, it bends its tail forward, but when shooting to the rear in Parthian fashion, it stretches the tail out. These spines

are fatal to everything they strike, excepting only the elephant; and they are a foot long and of the thickness of a rush. Now Ctesias says, and says that the Indians say so too, that fresh spines grow up in the spots whence the others have been cast, so that the animal's power of working mischief is continuous. And, as the same writer says, the beast especially likes human flesh, and does not lie in wait for single victims, but attacks two or three at a time, and gets the best of them single-handed. And it can overcome the other animals, but not the lion. This beast's name bears witness to its fondness for human flesh, for its Indian name means 'Man-eater' (Anthropophagus) in Greek, and it is so called from its habits. In swiftness it equals the hind. The Indians hunt the cubs of these brutes before they have developed the spines on the tail, and bruise this member with a stone to prevent its developing them. The voice is very similar to the blast of a trumpet. Ctesias says that he saw this animal in Persia, where it had been sent as a gift to the king, if one can take the Cnidian writer's testimony on such matters." Ctesias was evidently regarded even by the ancients as a bit of a Munchausen, and Pausanias, a very careful writer, puts down this fearful monster as simply a common tiger.

His criticism is very interesting; he says, as translated by Dr. Frazer, in the twenty-first chapter of the ninth book of his *Description of*

Greece: "Ctesias, in his description of India, mentions a beast which he says is called *martichoras* by the Indians, and 'man-eater' by the Greeks. I believe it is the tiger. That it has three rows of teeth on each jaw and prickles at the tip of the tail, and that it defends itself with these prickles at close quarters, and hurls them at its foes at a distance like the arrows of an archer; all this seems to me to be a false report which circulates amongst the Indians owing to their excessive fear of the beast. They were deceived also in respect of its colour; for when they saw the tiger in the sunlight it seemed to them to be red all over, either by reason of its speed, or, if it were not running, on account of its constantly turning about, especially if they did not see the beast near."

Other passages in the classics exemplify the belief that the ancients had in this supposed extraordinary speed of the tiger. Pliny says: "Hyrcania and India produce the tiger, an animal of tremendous swiftness, a quality which is more especially tested when we deprive it of all its whelps, which are always very numerous. They are seized by the hunter, who lies in wait for them, being provided with the swiftest horse he can possibly obtain, and which he frequently changes for a fresh one. As soon as the female finds her lair empty—for the male takes no care whatever of his offspring—headlong she darts forth, and

traces them by the smell. Her approach is made known by her cries, upon which the hunter throws down one of the whelps; this she snatches up with her teeth, and more swift, even, under the weight, returns to her lair, and then again sets out in pursuit; and this she continues to do, until the owner has reached his vessel, while the animal vainly vents her fury on the shore." There are some true touches in this very sensational account; although the tiger is not so very prolific, and is not particularly remarkable for speed, it is true that the male does not take an interest in his family as we have seen the lion does, and the locality Pliny calls Hyrcania—the southern shore of the Caspian Sea—is still inhabited by tigers. In fact, the tiger is not a specially Indian animal at all, but ranges over a very large part of Asia, including Persia, Southern Siberia, and even the cold island of Saghalien, as well as India and the other hot lands beyond it as far as Sumatra.

Although exhibited in Rome as early as Augustus' time, and again in that of Claudius, it was never common, and in the Middle Ages so dropped out of knowledge that Europeans forgot what it was like, and did not know it when it was again seen, but called it a kind of lion.

Marco Polo, for instance, in 1298, says of Kubla Khan's trained hunting tigers: "He has several huge lions . . . they have a very

beautiful coat and very beautiful colour, for they are striped all along, black and red and white." Nearly two hundred years later, in 1474, we find Josepha Barbaro again speaking of the tigress as a "leonza," or lioness, and saying "she is like unto a lyonesse; but she is red-coloured, streaked all over with black strykes; her face is redde with certain white and blacke spottes, the bealy white, and tayled like the lyon; seeming to be a marvailouse fiers beast."

The mediæval writers were fully impressed with the tiger's rapacity, and, indeed, as it certainly takes to man-eating more readily than any other of the great cats, to say nothing of the enormous amount of damage it does among cattle and other stock, it must in all ages have been one of the most serious foes man has ever had to contend with, although, like most ferocious carnivora, very much worse in former times than it is now.

Barros, writing in 1553, says: "Beginning from the point of Cingapura and all the way to Pulloçambilam, i.e. the whole length of the kingdom of Malaca . . . there is no other town with a name except this City of Malaca, only some havens of fishermen, and in the interior a very few villages. And indeed the most of these wretched people sleep at the top of the highest trees they can find, for up to the height of 20 palms the tigers can seize them at a leap; and if anything saves the poor people from these

beasts it is the bonfires they keep burning at night, which the tigers are much afraid of. In fact, these are so numerous that many come into the city itself at night in search of prey. And it has happened, since we [the Portuguese] took the place, that a tiger leapt into a garden surrounded by a good high timber fence and lifted a beam of wood with three slaves who were laid by the heels, and with these made a clean leap over the fence."

Colonel Yule reasonably enough characterizes this last detail of tigerish rapacity as "a Munchausen-like story," but that is no reason for altogether disbelieving the account given of the abundance and audacity of the tigers, which are still very numerous and destructive in the East Indies.

In Flower and Lydekker's valuable manual on *Mammals Living and Extinct*, it is stated that "according to one of the administrative reports of Java laid before the Dutch Chambers, portions of that island are being depopulated through tigers. In 1882 the population of a village in the south-west of the Bantam province was removed and transferred to an island off the coast in consequence of the trouble caused to the people by tigers. These animals have now become an intolerable pest in parts of the same province. The total population is about 600,000, and, in 1887, sixty-one were killed by tigers, and in consequence of the dread existing among the people, it has been proposed to

deport the inhabitants of the villages most threatened to other parts of the country where tigers are not so common, and where they can pursue their agricultural operations with a greater degree of security. At present they fear to go anywhere near the borders of the forest. The people seem disinclined, or they lack the means and courage, to attack and destroy their enemy, although considerable rewards are offered by Government for the destruction of beasts of prey. In 1888 the reward for killing a royal tiger was raised to two hundred florins. It appears also that the immunity of the tiger is in part due to superstition, for it is considered wrong to kill one unless he attacks first or otherwise does injury."

In Sumatra matters were about this time pretty well as bad, apparently; for in the *Royal Natural History*, edited by Mr. Lydekker, we find it stated that "a firm of Dutch merchants at Padang, Sumatra, writing in the autumn of 1891, stated that the arrivals of coffee from the interior were much below the usual average, on account of the number of tigers infesting the route; upwards of fifty men having been killed by them while engaged in bringing the coffee down-country." In India, too, only last year, as recorded in a letter to the *Field*, seven people were killed by tigers within two hundred miles of Calcutta itself.

The leopard, although not nearly so often mentioned, was as familiar in ancient times as

the lion; it is often mentioned in the Bible and the classics, and was one of the regular exhibition animals in the Roman games. Cicero, when Proconsul of Cilicia in Asia Minor, was worried by his friend Cælius, then Quæstor at Rome, to get him leopards for the arena. He writes rather jocularly from Laodicea in reply. I quote the translation given in M. Loisel's work on Menageries: "I am having panthers diligently looked out for you by hunters who are accustomed to this work; but very few are to be found, and they make out that the few that there are complain of being the only creatures for which traps are set in my province; so, it is said, they have resolved to emigrate into Caria. They are still being carefully sought for, and Patiscus is making a speciality of this matter. All that can be found shall be kept for you, but I do not know how many have been caught up to the present."

The leopard still exists in this part of Asia; in fact, it still holds all its ancient territory, which is wider than that of either the lion or the tiger, not only including Western and South-Western Asia, but the whole of Africa. It is doubtful whether it ever inhabited Europe in historical times; at any rate Aristotle, after mentioning the Thracian lions, expressly says there are leopards in Africa, but not in Europe. It is a very hard animal to extirpate compared with the two great Old World cats, for owing to

its stealthy and secretive habits, and its power of climbing, it is seldom seen, and often exists unsuspected quite close to large towns; there was a rumour of one in the suburbs of Calcutta when I lived there ten years ago. It is a thorough pest to humanity by its destructiveness to stock, and though it comparatively rarely takes to man-eating, it is a more terrible beast than the lion or tiger when it does do so, owing to its crafty ways. Its speed is also really remarkable, at any rate for the short rush of its charge, and perhaps the ancients got their ideas of the swiftness of the tiger by mixing it up with the leopard, with a touch of the harmless cheetah or hunting-leopard, which is really the swiftest thing on earth for a quarter-mile dash, thrown in. The popular confusion between tigers and leopards still goes on, for the leopard is called tiger in South Africa, as is the leopard-like jaguar, the third largest of the cats, in South America. The prowess of the leopard as a man-eater is well exemplified by the well-attested modern case now to be given.

Sterndale, in his *Mammalia of India*, gives an account of this beast, which, until a tiger recently lowered his record, was the worst man-eater known—the celebrated leopard, or pard as Sterndale, who discriminates between pards and panthers, calls it—of the Seeonee district. This beast's career of crime was run in the troublous days of the Indian Mutiny, which was the reason why he had the chance of

developing his man-eating propensities to such a terrible extent.

The radius of his man-hunting range is put by Sterndale at eighteen miles, and no one within this district knew when and where he might turn up; like all man-eaters, he was very cunning, and he would kill in villages as well as in the open, by day as well as by night. In accordance with the bloodthirsty nature of his race, he would kill unnecessarily, or only to suck the blood of his prey, and three human lives have been known to be sacrificed to his rapacity in one night.

He was timid as well as fierce, for single people have been known to have scared him from his kill; in one instance a poor woman clung to her husband, whom the spotted fiend had seized by the throat in the usual leopard fashion, and though the poor victim succumbed to this deadly grip, the body was left to the widow by the beast, and neither she nor her child were hurt by him.

The whole district was naturally terrorized by this pest, and no one knowing the superstition rampant among the natives of India even to-day will be surprised that the beast was considered to be something supernatural—a were-leopard, in fact, a malignant human spirit in bestial form. The identical man whose soul had inspired the body of the beast was supposed locally to be known. He was one Chinta, a Gond aborigine, known previously as a

wizard and werewolf, or at any rate reputed to be such by his superstitious neighbours, who told how on one occasion he changed himself into a leopard before his wife, in order to kill a nilghai for meat, and how she was so frightened when he came to her for the root, which he had given her to keep for him as the charm restoring him to human shape, that she fled in terror, throwing away the charm. The man-leopard, failing to find it, embarked on a career of man-slaughtering, in which the unhappy wife was the first victim!

This tradition was quite enough to intimidate the native hunters, and the killing went on until over two hundred lives had been lost, and this in the short space of three years. Sterndale himself, in 1857, had tried to kill the animal, and had actually seen it more than once during a beat; but this was in the beginning of the man-eater's career, and, thinking naturally enough that the beast which had just killed a man must be a tiger, he reserved his fire, and allowed the supposedly harmless leopard to escape. In the end a native "shikari" got the beast after all, and by an accident, for he did not know what he was firing at, and thought his mark was some kind of edible game-beast. Forsyth, in his *Highlands of Central India*, also gives an account of this historical man-eater, but puts the number of victims at "nearly a hundred" only; but this work is earlier than that of Sterndale by a good many

years, so that the large number above-mentioned can be taken as correct, and is quoted by Blanford in his *Fauna of British India.*

Pards and panthers, by the way, are not now recognized as distinct species, but only as varieties of the same beast, the leopard ; panther, a classical name like pard, meaning simply "the universal hunter," a very appropriate name for a beast which will, as Blanford says in his account of it, "strike down an ox or bound upon a sparrow."

In captivity the leopard is much more dangerous than the lion, and though it was sometimes kept about houses in the Middle Ages, as well as the cheetah—still occasionally used as a hunting animal in the East—there have been several cases of people having been killed by these presumably domesticated pets. But there is one very remarkable case of a really tame leopard which deserves quoting at length, not only as a record of individual amiability in one of the most dangerous animals, but as an unrivalled record of the doings of a reformed carnivore ; it was given by Mrs. Bowdich in *Loudon's Magazine* so many years ago, that though republished more than once, it will be new to many.

"I am induced," says the authoress, "to send you some account of a panther which was in my possession for several months. He and another were found, when very young, in

the forest, apparently deserted by their mother. They were taken to the King of Ashantee, in whose palace they lived several weeks; when my hero, being much larger than his companion, suffocated him in a fit of romping, and was then sent to Mr. Hutchison, the resident left by Mr. Bowdich at Coomassie. This gentleman, observing that the animal was very docile, took pains to tame him, and in a great measure succeeded. When he was about a year old, Mr. Hutchison returned to Cape Coast, and had him led through the country by a chain, occasionally letting him loose when eating was going forward, when he would sit by his master's side, and receive his share with comparative gentleness. Once or twice he purloined a fowl, but easily gave it up to Mr. Hutchison on being allowed a portion of something else. On the day of his arrival, he was placed in a small court leading to the private rooms of the Governor, and, after dinner, was led by a thin cord into the room, where he received our salutations with some degree of roughness, but with perfect good-humour. On the least encouragement, he laid his paws upon our shoulders, rubbed his head on us, and his teeth and claws having been filed, there was no danger of tearing our clothes. He was kept in the above court for a week or two, and evinced no ferocity, except when one of the servants tried to pull his food from him; he then caught the offender by the leg, and tore out a small

piece of flesh ; but he never seemed to owe him any ill-will afterwards. He one morning broke his cord, and, the cry being given, the castle gates were shut, and a chase commenced. After leading his pursuers two or three times round the ramparts, and knocking over a few children by bouncing against them, he suffered himself to be caught, and led quietly back to his quarters, under one of the guns of the fortress. By degrees the fear of him subsided ; and orders having been given to the sentinels to prevent his escape through the gates, he was left at liberty to go where he pleased ; and a boy was appointed to prevent him from intruding into the apartments of the officers. His keeper, however, generally passed his watch in sleeping ; and Sai, as the panther was called, after the royal giver, roamed at large. On one occasion, he found his servant sitting on the step of the door, upright, but fast asleep, when he lifted his paw, gave him a blow on the side of his head, which laid him flat, and then stood wagging his tail as if enjoying the mischief he had committed. He became exceedingly attached to the Governor, and followed him everywhere like a dog. His favourite station was at a window of the sitting-room, which overlooked the whole town ; there, standing on his hind-legs, his fore-paws resting on the ledge of the window, and his chin laid between them, he appeared to amuse himself with what was passing beneath.

The children also stood with him at the window ; and one day, finding his presence an incumbrance, and that they could not get their chairs close, they used their united efforts to pull him down by the tail. He one morning missed the Governor, who was settling a dispute in the hall, and who, being surrounded by black people, was hidden from the view of his favourite. Sai wandered with a dejected look to various parts of the fortress, in search of him ; and, while absent on this errand, the audience ceased, the Governor returned to his private rooms, and seated himself at a table to write. Presently he heard a heavy step coming up the stairs, and, raising his eyes to the open door, he beheld Sai. At that moment he gave himself up for lost ; for Sai immediately sprang from the door on his neck. Instead, however, of devouring him, he laid his head close to the Governor's, rubbed his cheek on his shoulder, wagged his tail, and tried to evince his happiness. Occasionally, however, the panther caused a little alarm to the other inmates of the castle, and the poor woman who swept the floors, or, to speak technically, the *fra-fra* woman, was made ill by her fright. She was one day sweeping the boards of the great hall with a short broom, and in an attitude nearly approaching to all-fours, and Sai, who was hidden under one of the sofas, suddenly leaped on her back, where he stood in triumph. She screamed so violently as to

summon the other servants; but they, seeing the panther, as they thought, in the act of swallowing her, one and all scampered off as quickly as possible; nor was she released till the Governor, who heard the noise, came to her assistance. Strangers were naturally uncomfortable when they saw so powerful a beast at perfect liberty; and many were the ridiculous scenes which took place; they not liking to own their alarm, yet perfectly unable to retain their composure in his presence.

"This interesting animal was well fed twice every day, but never given anything with life in it. He stood about two feet high, and was of a dark yellow colour, thickly spotted with black rosettes; and, from the good feeding, and the care taken to clean him, his skin shone like silk. The expression of his countenance was very animated and good-tempered, and he was particularly gentle to children. He would lie down on the mats by their side when they slept, and even the infant shared his caresses, and remained unhurt. During the period of his residence at Cape Coast, I was much occupied by making arrangements for my departure from Africa; but generally visited my future companion every day, and we, in consequence, became great friends before we sailed. He was conveyed on board in a large wooden cage, thickly barred in the front with iron. Even this confinement was not deemed a sufficient protection by the canoe-

men, who were so alarmed at taking him from the shore to the vessel, that, in their confusion, they dropped cage and all into the sea. For a few minutes I gave up my poor panther as lost; but some sailors jumped into a boat belonging to the vessel, and dragged him out in safety. The beast himself seemed completely subdued by his ducking; and as no one dared to open his cage to dry it, he rolled himself up in one corner, nor roused himself till after an interval of some days, when he recognized my voice. When I first spoke, he raised his head, held it on one side, then on the other, to listen; and when I came fully into his view, he jumped on his legs, and appeared frantic; he rolled himself over and over, he howled, he opened his enormous jaws, and cried, and seemed as if he would have torn his cage to pieces. However, as his violence subsided, he contented himself with thrusting his paws and nose through the bars of the cage, to receive my caresses.

"The greatest treat I could bestow upon my favourite was lavender-water. Mr. Hutchison had told me that on the way from Ashantee, he drew a scented handkerchief from his pocket, which was immediately seized on by the panther, who reduced it to atoms; nor could he venture to open a bottle of perfume when the animal was near, he was so eager to enjoy it. I indulged him twice a week by making a cup of stiff paper, pouring a little

lavender-water into it, and giving it to him through the bars of his cage ; he would drag it to him with great eagerness, roll himself over it, nor rest till the smell had evaporated. By this I taught him to put out his paws without showing his nails, always refusing the lavender-water till he had drawn them back again ; and in a short time he never, on any occasion, protruded his claws when offering me his paw.

"We lay eight weeks in the River Gaboon, where he had plenty of excellent food, but was never suffered to leave his cage, on account of the deck being always filled with black strangers, to whom he had a very decided aversion, although he was perfectly reconciled to white people. His indignation, however, was constantly excited by the pigs, when they were suffered to run past his cage ; and the sight of one of the monkeys put him in a complete fury. While at anchor in the before-mentioned river, an orang-outang (*Simia satyrus*) was brought for sale, and lived three days on board ; and I shall never forget the uncontrollable rage of the one, or the agony of the other, at this meeting. The orang-outang [this was no doubt a chimpanzee, an animal which was long confused with the more early known orang of the East] was about three feet high, and very powerful, in proportion to his size ; so that when he fled with extraordinary rapidity from the panther to the further end of the deck, neither men nor

things remained upright when they opposed his progress : there he took refuge in a sail, and although generally obedient to the voice of his master, force was necessary to make him quit the shelter of its folds. As to the panther, his back rose in an arch ; his tail was elevated, and perfectly stiff ; his eyes flashed, and, as he howled, he showed his huge teeth ; then, as if forgetting the bars before him, he tried to spring on the orang-outang, to tear him to atoms. It was long before he recovered his tranquillity ; day and night he appeared to be on the listen ; and the approach of a large monkey we had on board, or the intrusion of a black man, brought a return of his agitation. We at length sailed for England, with an ample supply of provisions ; but, unhappily, we were boarded by pirates during the voyage, and nearly reduced to a state of starvation. My panther must have perished but for a collection of more than three hundred parrots, with which we sailed from the river, and which died very fast when we were in the north-west trades. Sai's allowance was one per diem ; but this was so scanty a pittance, that he became ravenous, and had not patience to pick off the feathers before he commenced his meal. The consequence was, that he became very ill, and refused even this small quantity of food. Those around him tried to persuade me that he suffered from the colder climate ; but his dry nose and paw convinced me he was feverish,

and I had him taken from the cage; when, instead of jumping about and enjoying his liberty, he lay down, and rested his head upon my feet. I then made three pills, each containing two grains of calomel. The boy who had the charge of him, and who was much attached to him, held his jaws open, while I pushed the medicine down his throat. Early the next morning, I went to visit my patient, and found his guard sleeping in the cage; and having administered a further dose to the invalid, I had the satisfaction of seeing him perfectly cured in the evening. On the arrival of the vessel in the London Docks, Sai was taken ashore, and presented to the Duchess of York, who placed him in Exeter Change (then a menagerie) to be taken care of till she herself went to Oatlands. He remained there for some weeks, and was suffered to roam the greater part of the day without any restraint. On the morning previous to the Duchess's departure from the town, she went to visit her new pet, played with him, and admired his healthy appearance and gentle deportment. In the evening, when her Royal Highness's coachman went to take him away, he was dead, in consequence of an inflammation on his lungs."

The remarkable gentleness of this specimen rather reminds one of the puma, which, in captivity at least, has shown itself the most harmless of the great cats; as an important

carnivore in America, and an animal with a remarkably wide range, from Canada to Patagonia, it deserves some notice.

When the first colonizers of America came across pumas, they naturally thought they were lions, or rather lionesses, since they never saw any maned specimens. Thus Adrian van der Donck, quoted by Mr. F. W. True in the *Report of the United States National Museum* for 1889, says, in 1656: "Although the New Netherlands lay in a fine climate, and although the country in winter seems rather cold, nevertheless lions are found there, but not by the Christians, who have travelled the land wide and broad and have not seen one. It is only known to us by the skins of the females, which are sometimes brought in by the Indians for sale; who on inquiry say that the lions are found far to the south-west, distant fifteen or twenty days' journey, in very high mountains, and that the males are too active and fierce to be taken." Garcilasso de la Vega also spoke of the "lions" in Peru, though he noted that they were not so large and fierce as the African lions. Still, there is no doubt that the puma in those early days was at least pretty nearly as bad as the leopard of the Old World, which it so closely resembles in size, form, and habits, and, like that beast, occasionally turned man-eater, and was very dangerous when brought to bay.

Catesby, writing of the puma in Carolina, in

1743, says that when the hunter approaches to shoot a puma which has been treed by his dog he does so "with no small danger to himself, for descending furiously from the tree, he (the puma) attacks the first in his way, either man or dog, which seldom escape alive."

Mr. Murtrie, in his notes in Cuvier's *Animal Kingdom*, mentions in the case of the puma "that this animal, our common panther, does not always confine itself to sheep. It is well known, and has lately been proved, January, 1830, by an unprovoked attack upon an unfortunate woman in Pennsylvania. The ferocious brute seized upon her as she was passing along the road, and killed her in an instant."

Rather earlier than this, apparently, a more remarkable case occurred, as the victim was in this instance a strong and well-armed man; it is thus given by Colonel Roosevelt in his account of the cougar—as the puma is often called in North America—in *Hunting Trips of a Ranchman*. "Early in the present century" (the nineteenth), he says, "one of my ancestral relatives, a Georgian, moved down to the wild and almost unknown country bordering on Florida. His plantation was surrounded by jungles in which all kinds of wild beasts swarmed. One of his negroes had a sweetheart on another plantation, and in visiting her, instead of going by the road he took a short cut through the swamps, heedless of the wild beasts, and armed only with a long knife—for

he was a man of colossal strength, and of fierce and determined temper. One night he started to return late, expecting to reach the plantation in time for his daily task on the morrow. But he never reached home, and it was thought he had run away. However, when search was made for him his body was found in the path through the swamp, all gashed and torn, and but a few steps from him the body of a cougar, stabbed and cut in many places. Certainly that must have been a grim fight, in the gloomy, lonely recesses of the swamp, with no one to watch the midnight death-struggle between the powerful, naked man and the ferocious brute that was his almost unseen assailant."

Taking into consideration the fact that the puma is also a serious pest to stock-owners, destroying sheep wholesale, and doing great damage to colts, calves, and hogs, the first of which are its favourite prey, it can only be regarded as a matter for congratulation that in North America it has been so far got rid of that Mr. True, in the paper above quoted, says that "in many of the more thickly populated States it is improbable that even stragglers could be found to-day," although Mr. Roosevelt says it never attacks man nowadays. Mr. W. H. Hudson, writing of its ways in Argentina, also gives it a good character for harmlessness; in fact, he quotes several instances to show a positive tendency to friendliness to

man, and says the gauchos call it the only friend of man among the wild animals. It has even been credited with defending man against the jaguar, which, as above remarked, passes as the tiger in tropical America. Be that as it may, farther south it is a more dangerous beast. Musters, in his book on life among the Patagonian Islands, says it will attack a man on foot, and Mr. Hesketh Prichard, in his much more recent work dealing with the same country, confirms the report of this propensity.

The jaguar, which is found in the warmer parts of America only, is well-known to be a man-eater on occasion, much like the leopard of the old world, which it so much resembles in appearance. As with the leopard, black varieties appear in the jaguar, and are similarly credited with being particularly fierce.

V

ANIMAL RIVALS, CONTINUED; ANIMAL ALLIES

We early make the acquaintance of the bear as a neighbour and enemy of man from its frequent mention in the Old Testament in that character. Of course the best-known instance is the attack by the two she-bears on the naughty little boys who shouted after the prophet Elisha, "Go up, thou baldhead": "there came forth two she-bears out of the wood and tore forty and two of them." This is grotesquely embellished, for the more complete horrification of naughty little English boys, in the poems of Dr. Watts:—

> "God quickly stopped their wicked breath
> And sent two raging bears
> Which tore them limb from limb to death
> With blood, and groans, and tears."

With all due respect to the pious and poetical intentions of the author of this most terrible doggerel travesty of Scripture, they have really obscured the reality of the incident. The Bible does not say the boys were killed, but only torn; and it is an interesting fact that the bear's attack often takes the form of scalping—

at any rate, that is the method common with the sloth-bear of India, which frequently attacks man unprovoked. Thus there would be a curious appropriateness in the irreverent youngsters being made permanently bald, while the penalty would not be so disproportionate to the offence.

A casual allusion of the prophet Amos is of interest as showing what an ever-present terror the wild beasts must have been to the early Jews: "As if a man should flee from a lion, and a bear met him"—evidently the Biblical equivalent of our "jumping out of the frying-pan into the fire." The ferocity of the she-bear robbed of her whelps is also alluded to in the Bible, and the mournful howling of the distressed bear is recalled in the text of Isaiah: "We roar all like bears." David's encounter with the bear in defence of his father's flocks reminds us of the destructiveness of the beast to human property as well as persons; and Canon Tristram, to whose *Natural History of Palestine* I am indebted for some of the above references, mentions that the Palestine bear still varies its diet of fruits and roots "by a visit to the sheepfolds or the goats of the villages." This is much what the brown bear of Europe does, and in fact the Palestine bear, now rather rare in the country, is only a local race of that animal, remarkable for its light colour.

Allusions to the common bear are frequent



THE POLAR BEAR.

in classical writers, and as a matter of fact it is still found all over Continental Europe where there are forests of any extent; in our own country it existed during the Roman occupation, at any rate, having its haunts in the great Caledonian forests, though perhaps it had even at that period disappeared from Southern Britain. In Ireland it seems never to have been found.

The Scottish bears must have been particularly ferocious, or the Romans would not have gone to the trouble of exporting them from so distant a country as Scotland to Rome, when they could get bears so much nearer home. We know that they did this, and that they were used, like other fierce beasts, for the torture of human beings in the horrible exhibitions of the arena. In one of Martial's epigrams the fate of one Laureolus is alluded to: the poor wretch was fastened naked to a cross and exposed to the attack of a Caledonian bear.

Bears from one locality or another must have been common sights in Rome, for at the end of his *Art of Poetry* Horace compares the amateur poet, wild to inflict his terrible compositions on his friends, to a bear broken loose from his cage, in the rout he produces among those who are exposed to his attentions.

One great puzzle among bears, ancient and modern, is the African bear. Virgil speaks of old Acestes as

"Grim with his darts and Libyan she-bear's skin."

Yet Pliny, not so very long after Virgil, particularly says there were no bears in Africa; and on the other hand, a bear has been supposed to inhabit the Atlas range up to modern times. At any rate, a dead bear was seen by an English observer not much more than half a century ago; but it would seem likely that the bear was always very local in North Africa, and it is probably now extinct there.

Within the last year, however, evidence has been brought forward tending to show that a bear of some sort really does occur in Africa south of the Sahara, a very interesting account of what certainly appears to have been such an animal having appeared in the *Journal of the East Africa and Uganda Natural History Society*, by Mr. Geoffrey Williams.

It seems that this gentleman, travelling some years ago on the Uasin Gishu, long before that district had any settlers, saw at the edge of the escarpment, and only about thirty yards off, an animal resembling a large bear, the height of which, in the sitting posture, was estimated at five feet. The beast was of a dark colour, and, though heavily furred before and on the limbs, was comparatively smooth and bare behind. This unequal distribution of coat—which may, of course, have been due to moulting, which effects a great alteration in the appearance of bears—appears to have been the only point differentiating it from an ordinary brown bear. Local natives, on being shown

pictures of various animals, at once identified the illustrations of bears as resembling their beast, and the Nandi name of it is given as *Chemosit*. The natives said "Chemosit" was very nocturnal and dangerously aggressive in his habits, but that he attacked only solitary people, as a rule, though they had once known one break into a hut and kill all the inmates, after which the other natives burnt it hut and all.

Mr. Williams failed to secure the specimen he saw, but no doubt others will turn up, though the beast is said to be very rare; but if it attacks only those who have no companion to tell the tale, it may easily be imagined to be scarcer than it really is.

To return to the bears of olden times; no account of the relations of bear and man would be complete without some reference to that mediæval survival of Roman cruelties which took the form of bear-baiting, so familiar to us from many references in Shakespeare. The bears for this must have been imported, as far as the English practice of the "sport" was concerned, although no doubt in Roman times the native animal was used. Bear-baiting lasted down to the last century, but long before that it was considered a disreputable form of amusement.

Even in the rough Tudor times, indeed, we find the poet Crowley remonstrating against bear-baiting, though his objections, as remarked by the author of that rare and quaint

little old book of 1830, *The Zoological Keepsake*, were not founded on humanitarianism. The lines quoted are as follows :—

"What follie is this, to keep with danger,
A great Mastiffe Dog, and foule, ouglie Bear;
And to this end,—to see them two fight,
With terrible tearings, a ful ouglie sight:
And methinkes those men most fools of al,
Whose store of money is but very smal;
And yet, every Sunday, they wil surely spend
One penny or two, the Bearward's living to mend.

At Paris Garden, each Sunday, a man shall not fail
To find two or three hundred, for the Bearward's vale;
One halfpenny a-piece they use for to give,
When some of them have no more in their purses, I believe:
Well, at the Last Day, their conscience wil declare,
That the poor ought to have all that they may spare:
If you, therefore, give, to see a Bear fight,
Be sure God his curse upon you will light!"

The familiarity in English people's minds of the captive bear is indicated by a proverb which was in use in my boyhood : if one asked the whereabouts of a thing which was close at hand all the time, one would be told, "There it is ; if it had been a bear it would have bitten you." What being bitten by a bear feels like, by the way, has been well told by Lloyd, the author of *Scandinavian Adventures*, who lived to tell the tale, after having been mauled by one he had wounded, which was killed after the encounter. He tried shamming dead, in accordance with the prevailing idea that the bear will not mangle a corpse, but it did not do him

much good. "The pain," he says, "I suffered from his long-continued attacks on my body was bearable. When he had my limbs in his jaws it more resembled their being stuck in a huge vice than anything else; but when his jaws grasped, as they did, the whole crown of my head—during which I distinctly felt the fleshy part of his mouth to overlap my forehead—and his fangs very deliberately scored my head, my sufferings were intense. The sensation of his fangs slowly grating over the bare skull was not at all that of a sharp blow, as is often the case when a wound is inflicted, but rather, though very much more protracted, the craunch one feels during the extraction of a tooth. From certain circumstances, I have reason to believe that the bear continued to maltreat me for nearly three minutes. As I perfectly retained my senses the whole time, my feelings, whilst in this horrible situation, are beyond the power of description. But at length the incessant attacks of my gallant little dog drew the beast's attention from me, and I had the satisfaction to see him retreat, though at a very slow pace, into the adjoining thicket, where he was at once lost to view." On the beast being killed, it was found that it was a thin animal with broken or blunted fangs, to which circumstance Lloyd thinks he owed his life, while his close-cropped hair saved him from being scalped, as it afforded no hold for the beast's teeth; it did not attempt either to

claw or hug him, but from the attack on the head, and the danger Lloyd felt of the scalping, we are again reminded of the possibility of the peculiar appropriateness of the Biblical bears' behaviour to the case of the irreverent young prophet-baiters.

Captain J. H. Baldwin, in his account of the Himalayan black bear given in his book, *The Large and Small Game of Bengal and the North-West Provinces of India*, gives an instance of bear-baiting under the dominion of Nature, which is gruesome enough for anything. He says: "A gentleman I formerly met in the hills, a famed sportsman, related to me a most interesting anecdote of an encounter between a pack of wild dogs (dholes) and a bear, which he had witnessed. He was crossing a range of hills in the early morning, and by chance came across a ravenous pack baiting a poor bear, who, though making a stout resistance, was nearly done. His coat, and portions of his flesh, were torn to strips; and, although he had killed more than one of his opponents, he could not have held out much longer. If I remember rightly, B—t put an end to him with a bullet, and the wild pack made off."

This Himalayan black bear gives a good deal of trouble to the natives, being a dangerous beast and destructive to stock and crops as well. Mr. Alfred Ezra tells me of a case when a Kashmir native told him he might turn his twelve ponies into his (the native's) maize-

field, as the crop was not worth troubling about after the damage one bear had done to it. The black bear of the Himalayas, indeed, has a worse character there than the brown bear, which in the Himalayas ranges higher, generally above the forest zone, which is the haunt of the brown bear in that region, though sometimes the two may be found on the same ground. The black bear of the plains of India, too, the uncouth, rough-haired sloth-bear, is a most dangerous beast, and is more feared by the jungle tribes than the tiger, owing to its habit of attacking without provocation.

Curiously enough, in America, it is the local species of black bear that is nearly harmless to man—though not to his pigs—while the grizzly, which represents the brown bear in America, and is hardly more than a variety of it, is a very dangerous beast, and highly destructive even to cattle. But it seldom attacks man nowadays, or comes out into open plain country, modern weapons and the elimination of the fiercest which always goes on when man successfully contends with wild animals, having reduced it to insignificance as a foe to humanity.

Nowadays in narratives of Arctic exploration we expect to hear of the Polar bear as a useful provider of sport and fresh meat, but there are instances which show that the bear in earlier times might look on man from that point of view.

In the first volume of Churchill's *Collection of*

Voyages there occurs an instance of the Polar bear's man-eating exploits that has several times been quoted, but seems little known nowadays :—

"On the 6th of September, 1594, part of the crew of Barentz's vessel landed to search for a certain sort of stone ; during this search, two of the party laid down together to sleep, when a white bear, very lean, softly approached and seized one of them by the nape of the neck. The poor man, not knowing what it was, cried out, 'Who has seized me thus behind ?' on which his companion, raising his head, said, 'Holloa, mate, 'tis a bear,' and immediately ran away. The bear, having dreadfully mangled the unfortunate man's head, sucked his blood ; the rest of the party, to the number of twenty, immediately ran with their arms, and found the bear devouring the body ; the bear, on seeing them, ran upon them, and carrying another man away, tore him also to pieces. This second adventure so terrified them, that they all fled. They returned, however, with a reinforcement ; and the two pilots having fired three times without hitting the animal, the purser approached a little nearer, and shot the bear in the head close to the eye. This did not cause him to quit his prey, for, holding the body which he was devouring fast by the neck, he carried it away, as yet quite entire. Nevertheless, they then perceived that he began

himself to totter ; and the purser and a Scotchman going towards him, they gave him several sabre wounds, and cut him to pieces, without his abandoning his prey."

Of all wild animals, the wolf seems to have been the most constant and persistent foe of man, and its range is so wide—over most of the Northern Hemisphere—that he has always been forced more or less to wage war with it, in defence of his domestic animals even at times and in localities where it was not dangerous to human life. The wolf, however, is seldom to be trusted anywhere—when, as in India, it does not associate in large packs, and seldom attacks adult people, it is a deadly foe to children, and in colder climates, where hunger in winter forces the desperate brutes to unite to attack prey they are too cowardly to attempt singly, the loss of human life has been great and still continues to occur.

Only a few years since, in Siberia, a huge pack of wolves, according to the Press, overpowered in detail and killed a party of a hundred people, as they returned in a train of sledges from a wedding, unarmed—and probably pretty drunk into the bargain, if the truth were known. The only persons to escape were the driver and his mate in the leading sledge, which conveyed the bride and bridegroom, and these worthies had saved their skins, it was said, by overpowering the bridegroom and

throwing his newly made wife to the ravenous brutes!

Proverbs like "keeping the wolf from the door," "man is a wolf to his fellow-man," and beliefs like those in the power of certain people to change themselves into "were-wolves," and in the fate of dumbness which fell on a person who was seen by a wolf before he saw the beast himself, as well as the familiar tale of Little Red Riding-Hood, speak more eloquently of the horror this beast has inspired in man than any historical record can do.

Yet, throughout its wide range, it can only be regarded as fully extirpated in our own islands, for though it has almost or completely disappeared in certain Continental areas, it is always liable to reassert itself, where no sea-barrier exists.

> "With their long gallop, that can tire
> The hound's deep hate, and hunter's fire—"

wolves can cover an immense distance in a short time, and invade districts where they have been unknown for years past. Moreover, they are prolific and hardy, and any remissness in hunting them down is certain to be followed by a most undesirable increase.

It used to be a general belief that wolves were extirpated in three years in England and Wales by the tax of three hundred wolves' heads yearly imposed by the Saxon King Edgar upon the Welsh Princes; but this is a very great error; as Mr. Harting says in his

most exhaustive work on *Extinct British Animals*, to which I shall be frequently indebted, "this must be taken to refer only to Wales, for, in the first place, it can hardly be supposed that the Welsh chieftain would be permitted to hunt out of his own dominions, and in the next place there is abundant documentary evidence to prove the existence of wolves in England for many centuries later."

This evidence is then most carefully reviewed, from reign to reign, by Mr. Harting, and the upshot of it is that wolves probably lingered on in England till the reign of Henry VII. But at this time they were still quite common in Scotland and Ireland, and did not become extinct in those parts of the British Islands for long after—nearly two centuries, though, as usually happens in such cases, there is difficulty in tracing out the date of the final extirpation of the species. As late as 1618, for instance, John Taylor, the water poet, who executed a walking tour from London to Edinburgh in that year, says of the ruined castle of Kildroghit in Braemar: "I speak of it because it was the last house that I saw in those parts; for I was the space of twelve days after before I saw either house, cornfield, or habitation of any creature, but deer, wild horses, wolves, and such-like creatures, which made me doubt that I should never have seen a house again"—a description which reads more like Siberia than Scotland.

So wild was the country, in fact, and so great the hatred of the wolves in the minds of the people, that whole tracts of woodland were cut down or burnt to destroy the sheltering-places of the vermin. There are several stories of much interest as to the circumstances attending the destruction of the last specimens of these beasts in various districts; for instance, Scrope, in his *Days of Deer Stalking*, thus narrates the death of the last wolves in East Sutherland :—

"A man named Polson, of Wester Helmsdale, accompanied by two lads, one of them his son and the other an active herdboy, tracked a wolf to a rocky mountain gully, which forms the channel of the Burn of Sledale in Glen Loth. Here he discovered a narrow fissure in the midst of large fragments of rock, which led apparently to a larger opening or cavern below, which the wolf might use as his den. The two lads contrived to squeeze themselves through the fissure to examine the interior, whilst Polson kept guard on the outside.

"The boys descended through the narrow passage into a small cavern, which was evidently a wolf's den, for the ground was covered with bones and horns of animals, feathers, and egg-shells, and the dark space was somewhat enlivened by five or six active wolf cubs. Polson desired them to destroy these; and soon after



THE TIMBER WOLF.

he heard their feeble howling. Almost at the same time, to his great horror, he saw approaching him a full-grown wolf, evidently the dam, raging furiously at the cries of her young. As she attempted to leap down, at one bound Polson instinctively threw himself forward and succeeded in catching a firm hold of the animal's long and bushy tail, just as the forepart of her body was within the narrow entrance of the cavern. He had unluckily placed his gun against a rock when aiding the boys in their descent, and could not now reach it. Without apprising the lads below of their imminent peril, the stout hunter kept a firm grip of the wolf's tail, which he wound round his left arm, and although the maddened brute scrambled and twisted and strove with all her might to force herself down to the rescue of her cubs, Polson was just able, with the exertion of all his strength, to keep her from going forward. In the midst of this singular struggle, which passed in silence, his son within the cave, finding the light excluded from above, asked in Gaelic: 'Father, what is keeping the light from us?' 'If the root of the tail breaks,' replied he, 'you will soon know that.' Before long, however, the man contrived to get a hold of his hunting-knife, and stabbed the wolf in the most vital parts he could reach. The enraged animal now attempted to turn and face her foe, but the hole was too narrow to allow of this; and when Polson saw his danger he

squeezed her forward, keeping her jammed in whilst he repeated his stabs as rapidly as he could, until the animal, being mortally wounded, was easily dragged back and finished."

What Stuart, the author of *Lays of the Deer Forest*, regards as probably the last of all the Scottish wolves, was killed under most striking circumstances as late, apparently, as 1743. According to his account, the brute, which seems to have been black, had killed two children, who with their mother were crossing the hills from Calder ; whereupon the Laird of MacIntosh asked MacQueen of Pall-à-chrocain, a stalwart hunter over six and a half feet high, and the owner of the best deer-hounds in the country, to attend a clan gathering to hunt down the wolf. MacQueen inquired into the circumstances, and promised to come, but did not turn up till so late in the morning that everyone was disgusted with so unsportsmanlike a delay, as they thought it, and when MacQueen and his dogs did appear, the irritation of the chief was not at all appeased when the big Highlander coolly asked, "What was the hurry?" However, he soon allayed the rising annoyance of everyone by bundling out from his plaid the wolf's head—he had already settled the matter on his own account! He described the achievement, according to another author, Sir Thomas Dick Lauder, as follows: "As I came through the ravine by east the hill

there, I foregathered wi' the beast. My long dog there turned him. I buckled wi' him, and dirkit him, and syne whuttled his craig, & I brought awa' his countenance for fear he might come alive again, for they are very precarious creatures." Although MacQueen took his exploit in this very casual fashion, MacIntosh thought it deserving of a high reward, and gave him the lands of Sean-achan to furnish meal for his good dogs in all time.

In Ireland the wolves survived longer even than in Scotland; even Oliver Cromwell did not consider it beneath his dignity to wage war against wolves as well as rebels there, and his Order in Council on the subject, given at Dublin, June 29th, 1653, runs as follows, as given by Mr. Harting :—

"*Declaration touching Wolves.*

"For the better destroying of Wolves, which of late years have much increased in most parts of this nation, it is ordered that the Commanders in Chiefe and Commissioners of the Revenue in the several precincts doe consider of, use, and execute all good wayes and meanes how the Wolves in the counties and places within the respective precincts may be taken and destroyed; and to employ such person or persons, and to appoint such daies and tymes for hunting the Wolfe, as they shall adjudge necessary. And it is further ordered that all such person or persons as shall take,

kill, or destroy any Wolfes and shall bring forth the head of the Wolfe before the said commanders of the revenue, shall receive the sums following, viz. for every bitch Wolfe, six pounds; for every dog Wolfe, five pounds; for every cubb which preyeth for himself, forty shillings; for every suckling cubb, ten shillings. And no Wolfe after the last September until the 10th January be accounted a young Wolfe, and the Commissioners of the Revenue shall cause the same to be equallie assessed within their precincts."

Here, too, we find romantic stories about the hunting down of the last wolves. The last wolves of Tyrone, for instance, came to an end thus picturesquely described in *The Biography of a Tyrone Family*, as quoted by Mr. Harting :—

"In the mountainous parts of the county Tyrone, the inhabitants suffered much from Wolves, and gave as much for the head of one of these animals as they would now give (1829) for the capture of a notorious robber on the highway. There lived in those days an adventurer who, alone and unassisted, made it his occupation to destroy those ravagers. The time for attacking them was at night. There was a species of dog kept for the purpose of hunting them, resembling a rough, stout, half-bred greyhound, but much stronger.

"In the county Tyrone there was then a

large space of ground enclosed by a high stone wall, having a gap at the two opposite extremities, and in this were secured the flocks of the neighbouring farmers. Still, secure though this fold was deemed, it was entered by the Wolves, and its inmates slaughtered.

" The neighbouring proprietors having heard of the noted Wolf-hunter above-mentioned, by name Rory Carragh, sent for him and offered the usual reward, with some addition, if he would undertake to destroy the two remaining Wolves that had committed such devastation. Carragh, undertaking the task, took with him two Wolf dogs and a little boy, the only person he could prevail on to accompany him, and at the approach of night, repaired to the fold in question.

" ' Now,' said Carragh to the boy, ' as the Wolves usually attack the opposite extremities of the sheep-fold at the same time, I must leave you and one of the dogs to guard this one, while I go to the other. He steals with all the caution of a cat ; nor will you hear him ; but the dog will, and will positively give him the first fall. If you are not active, when he is down, to rivet his neck to the ground with this spear, he will rise up and kill both you and the dog.'

" ' I'll do what I can,' said the boy, as he took the spear from the Wolf-hunter's hand.

" The boy immediately threw open the gate of the fold, and took his seat in the inner part,

close to the entrance, his faithful companion crouching at his side and seeming perfectly aware of the dangerous business he was engaged in. The night was very dark and cold, and the poor little boy being benumbed with the chilly air, was beginning to fall into a kind of sleep, when at that instant the dog, with a roar, leaped across him and laid his mortal enemy upon the earth. The boy was roused into double activity by the voice of his companion, and drove the spear through the Wolf's neck, as he had been directed ; at which time Carragh made his appearance with the head of the other."

The only reason for regret that the extinction of British wolves can leave in the mind of any reasonable person is that it resulted in the almost complete extinction of the celebrated wolf-hounds, the noblest of all breeds of dogs ; although the breed called Irish wolf-hounds at the present day, albeit admittedly of mixed origin, are said to have some of the blood of the old breed remaining. What this old breed was like is rather uncertain, as the evidence is conflicting, some tending to show that the dog was essentially simply a larger and more powerful edition of the Highland deer-hound, like its modern representative, while there is also reason to suppose that smooth hounds, more of the Great Dane type, existed. Very likely, as Mr. Rawdon Lee has suggested in his book

on *Modern Dogs*, any dog that could follow and tackle a wolf was thereupon dubbed a wolf-hound, just as fox-hounds, when entered to deer, become "stag-hounds." Similarly, in bear-baiting days, we hear of bear-dogs, though there seems to have been no distinct breed corresponding to the name.

It is certain, however, that British dogs of great size and courage were known and esteemed even in the times of the Roman occupation of our country; they were shown at Rome in the arena, and there was even a Roman Chief of the Kennels, whose business was to arrange about their export. As time went on it was the Irish form of the breed that obtained the most celebrity, and was highly valued whenever obtained. Such a dog must have been Sam, the hound of Gunnar the Peerless of Iceland, whose tragic story is told in the *Saga of Burnt Njal*. Gunnar, although, like Hector in the Iliad, he was a man whom one feels one knows and likes merely from reading his story, nevertheless had many enemies, partly through the envy of the mean-souled Icelanders, and partly by the misdoings of his shrew of a wife, Hallgerda. So it was a good gift that his friend Olaf the Peacock gave him when he bestowed on him this hound that he had received as a gift in Ireland. "He is big," said the Peacock, "and no worse follower than a sturdy man. Besides, it is part of his nature that he has man's wit, and he will bay at every man whom

he knows is thy foe, but never at thy friends; he can see too in any man's face whether he means thee well or ill, and he will lay down his life to be true to thee." This hound's name is Sam. Then he said to the hound, "Now shalt thou follow Gunnar, and do him all the service thou canst." The hound went at once to Gunnar, and lay down at his feet.

This acquisition of Gunnar's was for some time a thorn in the side of his enemies, who did not see their way clear to attacking him unawares with such a faithful guardian on the premises. Having at last, however, after their usual cowardly fashion, got together a gang to fall upon him when they knew his people were all away haymaking, they seized the farmer who had the land next to Gunnar's, and forced him to call away the dog, which naturally knew him. The big hound fell into the trap, but as he went he caught a glimpse of the ambushed villains, and, turning with fury on the guide, whom he now knew to be a traitor—albeit an unwilling one, which a dog could not know—he tore his bowels out. The rest then killed the brave beast, but his last howl awoke his master, who realized that he must now turn single-handed to his last fight, in which he acquitted himself valiantly and killed two of his foes before he was overpowered and slain by numbers. Such was life among the Icelanders of the Saga period—a people who are sometimes held up to our admiration as manly fellows.

Wolves in North America have retreated more rapidly before civilization than in the Old World, and appear never to have been of quite so dangerous a nature. That it is quite possible for even wild American wolves and men to be on friendly terms is shown by what Hearne says in his *Journal,* written in 1795: "The Wolves always burrow underground to bring forth their young, and though it is natural to suppose them very fierce at those times, yet I have frequently seen the Indians go to their dens and take out the young ones and play with them. I never knew a Northern Indian hurt one of them; on the contrary, they always put them carefully into the den again; and I have sometimes seen them paint the faces of the young Wolves with vermilion or red ochre."

But Mr. Thompson Seton, who gives this quotation, also says of the modern Manitoba wolves in the *Mammals of Manitoba:* "Their extreme shyness is partly a modern development, as also is the respect for man, which now fully possesses every gray wolf in the cattle country. There are many records which show the Wolf to have been a continual danger to mankind in the bow-and-arrow days. There can be no doubt that then man was considered a fair prey; a difficult and wide-awake one, no doubt, but still a creature to be eaten in times of scarcity. Consequently, each winter in America, as in Europe, a number of

human beings were killed and devoured by hungry Wolves. During the last twenty years, however" (he is writing in 1909), "I cannot find a reliable instance of Western Wolves, or especially Manitoba Wolves, killing or even attacking human beings."

As an instance of the combined audacity and harmlessness of the modern Manitoba wolf, Mr. Seton gives an extraordinary anecdote of a couple which were found running round a wagon loaded with beef, and snatching a meal from the meat in spite of efforts on the part of the man who was drawing the wagon to drive them off with a pitchfork. The narrator of the incident to Mr. Seton shot the wolves, and the man said that they had destroyed sheep and a colt of his, but had never done harm to man. Mr. R. T. Pocock, Mammal Curator of the London Zoological Gardens, in a letter quoted by Mr. Seton in the *Mammals of Manitoba*, says of four young wolves raised a few years ago in the Gardens by a collie foster-mother, that after they were put in a paddock by themselves they grew wild and timid like two of their litter-brothers which had been raised by their real mother. One, however, of these dog-reared wolves "for some unknown cause remained tractable and dog-like. This is a most interesting case of individual variation in temperament, and suggests how breeds of domestic dogs have been brought to their present condition of tameness by breeding

from stock artificially selected for that attribute."

As an example of a tamable wolf which had grown up in the wild state, we may take the case of a black specimen trapped by an Indian in 1893, as reported to Mr. Seton by the Rev. J. A. McLaughlin. The Indian muzzled the wolf, harnessed him in his dog team, and "made him help haul in the load of fish." Mr. McLaughlin found this wolf chained up at the fort, the idea of the officer in charge being to mate it with one of his dogs. He handled it, and it was gentle and did not bite. This wolf may, of course, have had some blood of the domestic dog in it, but in view of the known differences of temperament in wild as well as tame animals, this instance, and the others given above, confirm Mr. Pocock's view, and help to do away with the difficulty of accounting for the descent of the dog, a sworn foe of the wolf and its frequent prey, and the friend of man, from wolves of some sort or other, which, as I shall presently endeavour to point out, seems to be the case. It must be remembered, as far as the eating of dogs by wolves goes, that wolves are well known to be cannibals, and the hatred between dog and wolf is simply an exaggeration of the clannishness well known even in the tame dog; while as to the dog's friendliness for man, and the way in which it can be taught to look after its natural prey—sheep and cattle—such a complete reversal of instinct has

shown itself in many animals, as in several recorded cases of cats which have made friends with birds. What is more to the point, since the fox is a near ally of the dog, this traditional foe of poultry has in some cases been known not only to spare them when in captivity, but even in one instance, at any rate, to entertain a friendly feeling for them. M. René Martin, in his *Mammals of France*, says : " M. Rollinat has at present several tame foxes. While most of these foxes are still depredators, one of them often goes into the poultry-yard and, far from persecuting the poultry, seems to want to protect them, so much so that, if anyone seizes a fowl, which, as usual, utters loud screams, this fox growls and bites the trousers of the intruder."

I may also cite here the case of a self-tamed Indian jackal which I recorded in my book, *Wild Beasts of the World*. This beast, fed and kindly treated by the owner of a house under whose veranda it had taken shelter in a famished and mangy condition, not only recovered its health, but got so tame that it would come into the veranda itself and lie down on a couch like a tame dog. And this though the Indian jackal, in spite of its being found even in towns, where it is on the look-out for garbage or any small live-stock it can steal, is no more a friend of man than the wolf ; for it sometimes carries off babies. This is the kind of jackal that Homer mentions, for it extends westwards throughout Asia Minor

and even into South-Eastern Europe, finding its north-western limit in Hungary.

The wolf is not found in Africa—a fact well known to the ancients—his place being filled by the three species of hyænas, which beasts are indeed called wolves by the Boers, the brown hyæna being called the strand-wolf, and the commoner spotted kind the tiger-wolf, no doubt from its spotted markings resembling those of the leopard, called tiger in South Africa.

But the hyæna that has been longest known is the striped species, which is found in North Africa, ranging east through Asia Minor into India. It was fairly familiar to the ancients, though they had some remarkable notions about it; Aristotle took the trouble to expose the fallacy of the belief that it changed its sex, but the error was current centuries after; and parts of its skeleton were in demand with wizards as material for spells. Although hated on account of its habit of digging up the dead, this cowardly brute has never been a serious enemy of man, and so has not been killed off to the extent that one would expect in the case of a carnivore of its size.

Its near relative, the brown hyæna, however, having but a limited range—for it does not occur north of the Zambesi—and being dangerous to farm stock, to say nothing of sometimes attacking man when it could do so safely, has been killed off to such an extent that it is said to be in danger of extinction; however, it has

been exhibited in recent years in the London Zoological Gardens.

The spotted hyæna, which is a purely African animal, is in a flourishing condition still—far too much so, in fact; for there is no doubt that this beast is one of the chief quadruped enemies of humanity in Africa, besides being a pest to all kinds of stock.

It was not well known to the ancients, as it is not known in North Africa, but it seems to be the original of the particularly weird beast known as the crocotta or leucocrotta. The noises this hyæna makes are quite enough to account for anything in the way of an evil reputation, for it is not only the hyæna that does the laughing, but it can make various other noises, more or less objectionable, and even has some idea of imitation, producing an absurd caricature of the lion's voice, according to Mr. Vaughan Kirby. It has a dreadful custom of eating people and animals piecemeal, making a snatch at a fleshy part and tearing off what it can; and when war or disease has weakened the natives and laid them open to its attacks, it is a dreadful scourge. It also has a standing feud with the lion, for being in a chronically ravenous state it casts envious eyes on the game he has killed; sometimes, coming too close, it cannot get away when the lion makes a rush at it, and is killed; at other times, natives say, the indignant king of beasts punishes the poacher by mutilating its feet.

When the lion is old and decrepit, however, matters must take another turn, and his last days are rendered miserable by the skulking brutes which now eagerly await, if they do not actually hurry, his miserable end.

Man has had every reason to persecute the wild boar, which not only provides meat even better than the pork of his domestic descendants, but is a most terrible pest to all sorts of crops. The only Biblical allusion to the swine—so abhorred by the Jews as unclean—as a wild animal, bears witness to its enmity to the farmer: "The boar out of the wood shall waste it."

The boar was, indeed, when Canon Tristram visited Palestine about the middle of the last century, still very abundant there, and a standing nuisance. In a single night, he says, a party would uproot a whole field, and destroy the husbandmen's hopes for the year, while in the vineyards they not only devoured the grapes, but munched up the bearing shoots of the vines.

Our ancient sporting writer, Turbervile, also bears witness to the destructive powers of the wild boar as known in England in his day. After saying that wild swine tread with the cleft halves of the hoof closer than tame pigs, and cut the ground more, he remarks: "There is likewise great difference in their rowtings; for a wild swine doth rowt deeper, because his snout is longer; and when they come into corn fieldes they follow a furrow, rowting and worming all

along by some balke until they come to the end. But tame swine rowte here and there all about the field, and never follow their rowting as the wild swine do. Likewise you may know them by the difference in their feedings in corne groune; for the wild swine beare doune the corne round about them, in one certaine place, and tame swine feed scattering here and there."

In addition to being a conscientious and thoroughgoing devastator like this, the boar, though not usually aggressive, can be a terrible foe when roused, as has been known from very ancient times. The grief of Venus when the handsome boy Adonis was slain by the boar he went to hunt, in the old legend, is well known by Shakespeare's beautiful poem, which contains the most splendid description of the animal ever written, as in the following quatrain:—

> "His brawny sides, with hairy bristles armed,
> Are better proof than thy spear's point can enter;
> His short thick neck cannot be easily harmed,
> Being ireful on the lion he will venture."

Another classical story brings in the boar as an agent in establishing a well-known proverb. A cruel king had harshly punished one of his slaves, who turned on him and told him that he should never taste the fruit of the vineyard that was then being planted. Nevertheless, the vines grew and bore fruit, the grapes were pressed and the juice fermented, and the owner, about to taste the first cup of wine, called his

miserable thrall, in mockery, to let him see the failure of his desperate prophecy. But the slave replied, "There's many a slip 'twixt the cup and the lip"; and just then someone rushed in to say a boar was among the vines. The king left his new wine untasted, and rushed to attack the boar, which killed his assailant, and established the proverb which has lasted in unaltered form down to our times.

Such encounters with boars may happen any day in India now, and the beast, in his encounters with British sportsmen, who never shoot him in country where he can be ridden down and speared, displays the most indomitable spirit and ferocity. I have seen a photo of the brave brute sitting on his haunches, with four spears projecting from him, and yet waiting for another charge; and to show the beast's tenacity of purpose I may here relate an anecdote that was told me by a well-known Calcutta pig-sticker.

He was out boar-hunting, and the boar, with a spear standing out of his back, galloped straight across him; he could not pull up his pony in time to get out of the way, and the boar rushed right under his mount. Horse and man, of course, went head-over-heels, and my friend said that as he struck the ground he thought he was now going to feel what being ripped by a boar was like. However, the boar's point was a copse close by, and, disregarding the fallen foes he made straight for this, only to

fall dead as soon as he reached it; the wrench of the spear as he struck the pony had no doubt completed the damage of the thrust. The narrator of this episode was home on a holiday a few years back, and took the opportunity of indulging in some boar-hunting—with the gun this time—in Albania. I asked him how the European boar compared in courage with the Indian race, and he replied contemptuously: "Oh, he's a miserable coward; he *squeals* when he's dying!" The Indian boar has apparently no breath to waste in such lamentations; one fierce grunt as he turns to charge, and he keeps the rest of his breath for giving his adversaries something to "squeal" about, if possible. That he seldom hurts anyone is simply due to the fact that he is generally pursued by several horsemen, each riding hard for "first spear," so that his attention is liable to be distracted before he can damage anyone who happens to be unhorsed.

With such personal qualities in addition to destructive habits and the possession of edible flesh, it is surprising that the boar has suffered so little from our persecution; few animals, indeed, have maintained their ground so well, for he still keeps most of his ancient range, being found even in a highly cultivated and thickly populated country like Belgium. Indeed, the only country of any size in which he has been entirely extirpated is our own; and there his extermination is of comparatively recent date,

in England at any rate. It is strange to read of James I hunting the beast at Windsor in 1617; but the wild boar cannot have been far off extinction in Stuart times, though Mr. Harting, in his valuable book on *Extinct British Animals*, mentions an entry in an old account-book, dated February, 1683: "Pd. the cooper for a paile for ye wilde swine 0–2–0," as evidence that the beast was not extinct then. It seems to me that the very fact that the beasts were fed from a pail rather indicates that they were captive animals, and probably imported, for it is recorded that Charles I had tried to stock the New Forest with specimens imported from France, or, according to another account, from Germany, and that these animals, which "much increased, and became terrible to the travellers," were destroyed in the civil wars, though traces of the breed were left in the local tame pigs. Evelyn also introduced Continental wild swine into Surrey, as did, many years later, General Howe in Hampshire, but the local residents naturally enough in both cases refused to put up with such objectionable animals.

The wild ruminants, poor beasts, have been chiefly associated with human history as providers of human food; but they are pests to crops, and in India the depredations of deer are severely felt, while at least one species, the beautiful gazelle known as the springbok, has been as bad as the locust, in its days of abundance.

In 1824 Captain Stockenstrom thus described the abundance and migration of the springbok at the Cape in his day :—

"It is scarcely possible for a person passing over some of the extensive tracts of the interior, and admiring that elegant antelope the springbok, thinly scattered over the plains, and bounding in playful innocence, to figure to himself that these ornaments of the desert can often become as destructive as the locusts themselves. The incredible numbers which sometimes pour in from the north, during protracted droughts, distress the farmer inconceivably. Any attempt at numerical computation would be vain ; and by trying to come near the truth, the writer would subject himself, in the eyes of those who have no knowledge of the country, to a suspicion that he was availing himself of a traveller's assumed privilege. Yet it is well known in the interior, that on the approach of the *Trek-bokken* (as these migratory swarms are called) the grazier makes up his mind to look for pasture for his flocks elsewhere, and considers himself entirely dispossessed of his lands till heavy rains fall. Every attempt to save the cultivated fields if they be not enclosed by high and thick hedges proves abortive. Heaps of dry manure (the fuel of the Sneeuwbergen and other parts) are placed close to each other round the fields, and set on fire in the evening, so as to cause a dense smoke, by

which it is hoped the antelopes will be deterred from their inroads; but the dawn of day exposes the inefficacy of the precaution, by showing the lands, which appeared proud of their promising verdure the evening before, covered with thousands, and reaped level with the ground. Instances have been known of some of those prodigious droves passing through flocks of sheep, and numbers of the latter carried along with the torrent, being lost to the owners and becoming a prey to the wild beasts. As long as these droughts last, their inroads and depredations continue; and the havoc committed upon them is of course great, as they constitute the food of all classes; but no sooner do the rains fall than they disappear, and in a few days become as scarce on the northern borders as in the more protected districts of Bruintjes-Hoogte and Camdeboo. The African colonists themselves can form no conception of the cause of the extraordinary appearance of these animals; and, from their not being able to account for it, those who have not been eye-witnesses of such scenes consider their accounts as exaggerated; but a little more minute inspection of the country south of the Orange River solves the difficulty at once. The immense desert tracts between that river and our Colony, westward of the Seekoe River, though destitute of permanent springs, and therefore uninhabitable by human beings for any length of time, are, notwithstanding, interspersed with stagnant

pools and *vleys*, or natural reservoirs of brackish water, which, however bad, satisfies the game. In these endless plains, the springboks multiply, undisturbed by the hunter (except when occasionally the Bosjesman destroys a few with his poisoned arrows) until the country literally swarms with them; when, perhaps one year out of four or five, a lasting drought leaves the pools exhausted, and parches up the soil, naturally inclined to sterility. Thus want, principally of water, drives those myriads of animals either to the Orange River or to the Colony, when they intrude in the manner above described. But when the bountiful thunder-clouds pour their torrents upon our burnt-up country, reanimating vegetation, and restoring plenty to all graminivorous animals,—then, when we could, perhaps, afford to harbour those unwelcome visitors, their own instinct and our persecutions propel then again to their more sterile but peaceful and secluded plains, to recruit the numbers lost during their migration and to resume their attacks upon us, when their necessities shall again compel them."

Pringle, who says he has little to add to this description, says, in *The Menageries* (1829), whence this quotation is taken: "I once passed through a most astonishing multitude scattered over the grassy plains near the Little Fish River. I could not, for my own part, profess to estimate their number with any degree of accuracy; but

they literally *whitened*, or rather *speckled*, the face of the country as far as the eye could reach over those far-stretching plains ; and a gentle man, better acquainted than myself with such scenes, who was riding with me, affirmed that we could not have fewer of these animals, at one time, under our eye, than twenty-five or thirty thousand."

The elephant must have been one of the most serious adversaries of early man, for his depredations on crops are on a magnificent scale, corresponding to his size ; but as he can also supply meat at similar wholesale rates, and is, for such a large animal, extremely timid, he has probably on the whole been less formidable and more useful than one would expect ; moreover, the Indian species, at all events, has long been a valued servant of man, though never domesticated in the proper sense of the word, wild animals being captured as required. The elephant has always been an animal of universal popularity, and he evidently made much the same impression on the Romans as on ourselves—that of a beast of extraordinary docility and intelligence. This is well seen in the following quaint account of an elephant exhibited in London in the seventeenth century, taken from an old hand-bill framed in the Library of the Zoological Society, in all its delightful vagaries of spelling, punctuation, capitals, and italics :—

"A Full and True Relation of the

ELEPHANT

That is brought over into *England* from the *Indies*, and Landed at *London*, *August* 3*rd*, 1675.

"Giving likewise a true Account of the Wonderful Nature, Understanding, Breeding, Taking, and Taming of Elephants.

And Likewise where this Elephant is to be seen

"Amongst all the Wonderful and Prodigious Creatures that have been seen in this Kingdom of *England*, since the Age of Man, none so strange, nor so great as an Elephant, and which is more, it cometh nearest in wit and capacity, to man, as *Pliny* saith; for they understand the Language of that Country wherein they are bred; they do whatsoever they are commanded, they remember what duty they are taught, and withal take delight both in love and glory. Nay, more than all this, they embrace goodness, honesty, prudence, and equity (rare qualities to be found in men) and withal have in Religion, reverence, (with a kind of Devotion) not onely the Stars and planets, but the Sun and Moon they also worship. And some writers report thus much of them, that when the New Moon begineth to appear bright, they come down to a certain River named *Amelus*, in the Desarts and Forrests of Mauritania, where after they are washed, and dashed themselves all over with



THE INDIAN ELEPHANT.

the water, and have saluted and adored, after their manner that planet, they return again into the woods, carrying before them their young Calves, that be wearied and tired. Moreover, they are thought to have a sense of Religion and Conscience in others: for when they are to pass the seas into another country, they will not Embarque before they be induced thereunto by an Oath of their Governours, that they shall return again; and seeing there have been divers of them, being infeebled by sickness (for as big as they be, subject they are to grievous Malladies) to lie upon their backs, casting and flinging Herbs up towards Heaven, as if they had procured and set the Earth to pray for them. Now for their Docility and aptness to learn anything, the King they adore they kneel before him, and offer unto him Garlands and Chaplets of Flowers, and green Herbs. The lesser sort of them, which they call Bastards, serve the *Indians* in good stead to plow their ground.

"They breed in that part of *Africk* which lyeth beyond the Deserts of *Syrtes*: also in *Mauretania*, they are found also amongst the *Æthiopians* and *Troglodites*, but *India* bringeth forth the biggest; as also the Dragons that are continually at variance with them, and evermore fighting, and those of such greatness that they can easily clasp and wind about the Elephants, and withal, tye them fast with a Knot. In this Conflict they dye, both the one

and the other: the Elephant falls down dead as conquered, and with his heavy weight crusheth and Squeeezeth the Dragon that is wound and wreathed about him.

"In *India*, from whence this Elephant came they take them in this manner: The Governour driveth one of them that are tame, into the Chase and Forrests, and when he can meet with one of them alone, or single him from the Herd, he beateth the wild beast till he hath made him weary, and then he mounteth upon him, and ruleth him as well as the other.

"In Africk they catch them in great ditches, which they make for that purpose, unto which if one of them chance to fall, and cannot get out: so soon as he is seen by other Elephants, they immediately come to succour him, they bring all the boughs they can get, and put them into the Ditch, then rowl down blocks and stones, and anything that will serve to raise a bank, then strive all they can to pluck him out.

"The manner of taming (as furious and raging mad as they be sometimes) is with hunger and stripes; but men must have the help of other Elephants that are tame already, to restrain the unruly Beast with strong chains. In the Indian and African Wars they served to carry Castles with armed Men on their backs, to enter the Squadrons and battalions of the Enemies, and for the most part, all the service in the Wars of the East, was

performed by them, they broke the ranks, bore down armed men that were in their way, and stamped them under foot. These terrible beasts (as outragious as they seem) are frighted with the least grunting of a Swine. They breed but once in all their life time, and go two years with young, yet bring forth but one neither ; also they Live commonly by course of Nature 200 years, some of them 300. Their youthful time, and strength of age beginneth when they be sixty years old, but this which is brought over into England is said to be but seven.

" The Truncks and bodies of Trees is the best meat they have, and therein take most delight. They chew and eat their Meat with their mouth, but they breathe, drink, and smell with their Trunck, which is not improperly called their hand. Of all other living creatures they cannot abide a Mouse or a Rat, and if they perceive their provinder lying in the Manger taste or scent never so little of them, they refuse it, and will not touch it. They are mightily tormented with pain, if they chance in their Drinking to swallow down an Horse-Leech, for as soon as the horse-Leech hath settled fast in his Wind-Pipe it putteth him to intolerable pains ; their skin on their backs is most tough and hard, but the flesh soft and tender, covered their skin is neither with hair nor bristle, no not as much as in their tail, which might serve them in good stead to drive away the troublesome flyes.

Their skin is full of cross wrinckles, and besides that, the smell thereof is able to draw such vermine to it; and therefore when they are laid stretched along, and perceive the flyes settle in swarms on their skins, suddenly they draw such cranies together close, and so crush them all to Death; their teeth bear a very high price, and were reckoned very commendable by the Heathens, to make the Stautes and Images of their gods; but the greatest use that we make of them here, is to make Combs, as we may see here at most Comb-makers doors in London.

"Now having given you an account of their understanding, how they breed, the manner of taking and taming of them, I will now inform you of one lately brought over into England, and give you a full Description of it, as thus: This Elephant is of a Don colour, the body of it [though but young] is bigger than the bodies of two horses, a strange, wonderful, and mighty large head, with a Trunk or Nostril exceeding a yard downwards, Eyes but ordinary, Ears like a Blood-Hound, hanging down, Legs as big or bigger than an ordinary man's body, and feet proportionable, &c. But this being not above seven years old, is not grown the sixth part to what it will be about sixty years hence, if it live so long.

"*If any persons are desirous to see this wonder of Beasts,* let them repair to the Rising-Star *in St.* John's Court, *neer* Clerkenwell-green,

where they may have true information, where they may see it, it being kept neer it.

"Printed for *William Sutten*, in the Year, 1675. *With Allowance.*"

The information—such as it is—in this remarkable production is mostly taken from Pliny, and gives a good idea of ancient notions about the elephant. One interesting point to be noticed is that the African species is said to be smaller than the Indian, in direct contradiction to modern observation. But it must be borne in mind that a race of elephants, which became extinct in classical times, once inhabited northern Africa, and this, as the African elephant is known to vary locally, even producing a pigmy variety in the West, may easily have been smaller than the Indian animal. The inferior sort of elephants mentioned seems to show that even in Pliny's time the Indian natives recognized the three types into which they divide elephants: the Koomeriah, or high-caste elephant, which is all that an elephant should be in massiveness and dignified repose of manner; the Dwasala, or second-rate, to which the average elephant belongs; and the Mirga, or third-rate, which is a weedy, ill-conditioned brute, with long legs, sharp-ridged back, flabby trunk, and piggish, restless eyes. From the point of view of the Indian amateurs of elephants, the African species, in spite of his size, is a Mirga of the

most pronounced type, and he is not at all admired by them. It is this species, as everyone knows, that supplies most of the world's ivory, and it is for this that it has been so persecuted. It is now, however, well protected in all parts of Africa under British domination, and the Indian elephant is not allowed to be shot at all unless he is a "rogue"—a rogue elephant being about as bad as a man-eating tiger. Such fierce-dispositioned elephants have no doubt always existed, for even birds may develop a hatred for man, resulting in apparently unprovoked attacks.

It was not only with land animals that man has had to contend; there can be no doubt that early navigators, in their small ships, propelled so often by rowing, had to dread the attack of "sea-monsters" as they say they did, and these were no doubt the sperm whale or cachalot.

"Numberless stories," says Beale in his book on the sperm whale, "are told of fighting whales, many of which, however, are probably much exaggerated accounts of the real occurrences. A large whale, called 'Timor Jack,' is the hero of many strange stories, such as his destroying every boat which was sent out against him, until a contrivance was made by lashing a barrel to the end of the harpoon with which he was struck, and whilst his attention was directed and divided amongst several boats, means were found of giving him his death wound."

In the year 1804, the ship *Adonis*, being in company with several others, struck a large whale off the coast of New Zealand, which "stove" or destroyed nine boats before breakfast, and the chase consequently was necessarily given up. After destroying boats belonging to many ships, this whale was at last captured, and many harpoons of the various ships that had from time to time been sent out against him were found sticking in his body. This whale was called "New Zealand Tom," and the tradition is carefully preserved by whalers.

Accidents of the most fearful nature have frequently occurred in this hazardous pursuit, which to enumerate would fill the space of volumes: "For not only boats, but sometimes even ships have been destroyed by these powerful creatures. It is a well-authenticated fact, that an American whale-ship called the *Essex* was destroyed in the South Pacific Ocean by an enormous sperm whale. While the greater part of the crew were away in the boats, pursuing whales, the few people remaining on board saw an immense sperm whale come up close to the ship, and when very near he appeared to go down for the purpose of avoiding the vessel, and in doing so he struck his body against some part of the keel, which was broken off by the force of the blow and floated to the surface; the whale was then observed to rise a short distance from the ship, and come with apparently great fury towards it, striking

against one of the bows with his head, and completely 'staving' it in. The ship, of course, immediately filled, and fell over on her side, in which dreadful position the poor fellows in the boats soon espied their only home, being distant from the nearest land many hundred miles; on returning to the wreck they found the few who had been left on board hastily congregated in a remaining whale-boat, into which they scarcely had time to take refuge before the vessel capsized. They with much difficulty obtained a scanty supply of provisions from the wreck, their only support on the long and dreary passage before them to the coast of Peru, to which they endeavoured to make the best of their way. One boat was fortunately found by a vessel not far from the coast: in it were the only survivors of the unfortunate crew, three in number, the remainder having perished under unheard-of suffering and privation."

This happened in 1820; in 1851, also off the coast of Peru, the *Ann Alexander* was sunk by a sperm whale, "under like circumstances to those of the *Essex*," says Captain Scammon, in his *Marine Mammals of the North-Western Coast of North America*, and he proceeds: "In 1807, the ship *Union*, of Nantucket, was wrecked 'by striking,'" says the narrator, "on a sperm whale. It was in the night, and the question is, whether the ship struck the animal accidentally, or whether the whale made an attack? Other disasters to vessels might be

cited, which were occasioned by the attack of, or by coming into collision with, the colossal Cachalot. . . . And we have no doubt but that many vessels which have sailed from port, and never been heard of after, have suffered wreck through Cachalots."

In contrast to the terrible cachalot, which, with all other large whales, has now been greatly reduced by the pursuit of man, who, having learnt to overcome him, has hunted him relentlessly for his valuable products of oil and spermaceti, we have the cheery dolphin, which, in its exuberant jollity, reminds one of the squirrel among land animals, and seems to have particularly engaged the affections of the ancients. According to them the dolphin did not confine himself to rollicking round ships, but even entered into personal friendliness with men, and would save people from drowning, as in the case of the musician Arion, who, the story goes, was thrown overboard by robbers who coveted his wealth, and received on his back by a friendly dolphin which brought him safely to shore. Another good-natured dolphin, recorded by Pliny, used to take a little boy to school by water, on his back ; but leaving aside such stories as these, which nevertheless probably had some foundation in fact, we may notice one or two more easily confirmed dolphin tales.

" Men wonder," says Ælian in the eighteenth chapter of the first book of his *Natural History*,

" at the great love of women for their children ; but I observe that mothers have survived the death of their sons and daughters, and that by the lapse of time their grief has abated, and they have found forgetfulness of their sorrows. Now, the female dolphin is, of all creatures, that which has the greatest love for its young. For it has two calves ; and when a fisherman wounds one with his trident or strikes it with his harpoon—a harpoon has a hole in it to which a long line is fixed, while the barbs penetrate and hold the beast—and while the wounded dolphin, in spite of its pain, is still vigorous the hunter lets the line run, for fear of the harpoon being torn out, which would mean to him a double loss, the dolphin going off with his harpoon in addition to his losing the beast ; and when he sees the beast is weakened and getting exhausted by its wound, he gently brings the ship alongside, and captures his booty. But the dam is not terrified by this performance, and is not kept away by fear, but by her wonderful instinct obeys her yearning for her young, and however much you try to frighten her, she cannot be driven off, but will not leave her offspring to its fate ; she keeps so close to the harpooners, as if to help it, that it is possible to strike her by hand, and so she is captured along with her young, although she had the opportunity of escape. And if both her calves are with her, and she perceives that one has been struck and is being hauled in as I have described

above, she attacks the other and drives it off with blows of her tail, and bites, and giving it by snorting and blowing a hint to seek safety in flight. So the unhurt calf goes off, and the mother hangs about till she is caught, and dies with her captured offspring."

It will be seen that the behaviour of the dolphin here is not unlike that attributed to the sea-cow by Steller, who is universally regarded as a reliable observer. Other tales of dolphins represent them as assistants to men in fishing, and in confirmation of these there is quite adequate modern evidence, as will be seen directly. Ælian, in his second book, has the following acount of how dolphins help men in their fishing. On calm nights the fishermen hang out lanterns which give a soft light without glare; the fish, first attracted and then terrified by the light, rush to a rock or the shore, and are easily speared there. The dolphins, seeing by the light that fishing is going on, come to the assistance of the fisherman, driving in the fish, and preventing any from escaping. Thus a large quantity of the fish, hemmed in as they are by the dolphins and the boats, are captured; then the dolphins come up as if in expectation of their reward, which the fishermen are careful to give them ungrudgingly, with an eye to their assistance in the future. For the fishermen think that if they did not share the booty with the dolphins, they would have the creatures against them instead of on their

side. In the *Proceedings of the Zoological Society* for 1856, Fairholme gave the following account of the business alliance between the Australian blacks of Moreton Bay and the "porpoises" (more properly dolphins) :—

"Between the two long islands which form the south part of Moreton Bay, is a long passage known as the South Passage, formerly used for ships entering the Bay, but now given up. Near the deserted Pilot Station at Amity Point, some of the natives may constantly be found during the warmer months of the year fishing for 'Mullet,' a very fine fish about the size of a mackerel. In this pursuit they are assisted in a most wonderful manner by the Porpoises. It seems that from time immemorial a sort of understanding has existed between the blacks and the Porpoises for their mutual advantage, and the former pretend to know all the Porpoises about the spot, and even have names for them.

"The beach here consists of shelving sand, and near the shore are small hillocks of sand, on which the blacks sit, watching for the appearance of a shoal of Mullet. Their nets, which are used by hand, and are stretched on a frame about 4 feet wide, lie ready on the beach. On seeing a shoal, several of the men run down, and with their spears make a peculiar splashing in the water. Whether the Porpoises really understand this as a signal, or think it is the fish, it is difficult to determine, but the result is

always the same ; they at once come in towards the shore, driving the Mullet before them. As they near the edge, a number of the blacks with spears and hand-nets quickly divide to the right and left, and dash into the water. The Porpoises being outside the shoal, numbers of fish are secured before they can break away. In the scene of apparent confusion that takes place, the blacks and Porpoises are seen splashing about close to each other. So fearless are the latter, that strangers, who have expressed doubts as to their tameness, have often been shown that they will take a fish from the end of a spear, when held to them.

" For my own part I cannot doubt that the understanding is real, and that the natives know these Porpoises, and that strange Porpoises would not show so little fear of the natives. The oldest men of the tribe say that the same kind of fishing has always been carried on as long as they can remember. Porpoises abound in the Bay, but in *no other part* do the natives fish with their assistance."

Messrs. Lucas and Le Souëf, in their recent book on the *Animals of Australia,* mention a curious partnership between the whale fishermen of Twofold Bay, New South Wales, and the largest of the dolphin family, the grampus or killer. These creatures, they say, " are in the habit of driving the whales into the Bay, where the men dispatch them, rewarding the

monsters with the offal. The fishermen are loud in the praises of their allies, and strongly resent any interference with them."

Moreover, a correspondent of the *Field*, quoted by Mr. Millais in his account of the grampus in *The Mammals of Great Britain and Ireland*, says that this great whale-like dolphin or "minor whale," as he calls it, has often been known to swim up to men when upset into the water by their boat being smashed by a sperm whale, and simply smell them, going off in pursuit of the wounded whale; while to all the sharks the grampus "is a deadly enemy, and attacks them fiercely as they attempt to tear off mouthfuls of blubber from a killed Whale." The beast is, however, now known to be dangerous in the Antarctic seas.

There is even an instance of an individually friendly cetacean in the form of "Pelorus Jack," who was believed by Messrs. Hutton and Drummond to be a specimen of the large dolphin known as the goose-beak whale. "Pelorus Jack," they say in their book on the *Animals of New Zealand* (second edition), "often follows vessels in the bays and sounds at the north of the South Island, and his appearance always excites great interest on the part of passengers. He has become an object of so much public regard that the Government announced in the *Gazette* at the end of 1904 that he was to be protected for five years." It seems curious that the protection was thus limited, but as an

additional proof of the worthy dolphin's personal popularity, I may mention that I have heard he has even received the honour of illustration on a picture post card. Whether he is alive now is not known, but there has been no report of him since 1916; so say Messrs. Hutton and Drummond in the fourth edition of their book, where he figures as Risso's grampus, since it was under that name that he was granted state protection.

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